

E L E M E N T S
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T H E R A P E U T I C S:
O R,
F I R S T P R I N C I P L E S
O F T H E
P R A C T I C E O F P H Y S I C.

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Εγώ δὲ τί βούλομαι; καταμαθεὶν τὴν Φύσιν, καὶ
ταύτῃ ἱππεύειν. Epictet.

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To the MEDICAL SOCIETY of STUDENTS
in Edinburgh.

GENTLEMEN,

DEDICATIONS may in general be ascribed either to gratitude for past, or to expectation of future services. I do not pretend to say that I am in no degree influenced by these considerations. I am proud to affirm that I retain a deep sense of the former, and I am not ashamed to acknowledge that I live in hopes of the latter. But a reason different from both has principally determined me to address you on the present occasion.

I take this opportunity of soliciting, not your patronage, but your correction. I

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have long witnessed that candour and liberality of sentiment with which you examine every attempt to improvement in the medical art. Equally strenuous advocates in the defence of truth, and judicious critics in the detection of error, you are always ready to hear, and never unwilling to be convinced. To you, then, I dedicate the following sheets, from a persuasion that you will afford me a fair opportunity of defending and illustrating my sentiments; and that, from your observations, I shall be enabled to detect present, and avoid future errors.

I am, Gentlemen,

Your fellow Member,

And humble servant,

The AUTHOR.

EDIN. 25. Oct. }

1772. }

P R E F A C E.

AN acquaintance with the operation of medicines is the foundation of all rational practice in the cure of diseases. Physicians, however, are by no means agreed in their opinions on this subject, which may be considered as a convincing proof that it is still in an imperfect state. To remedy this imperfection, therefore, as far as the nature of the subject will allow, should be the endeavour of every one who means to practise medicine, either with advantage to others, or credit to himself.

From this consideration I was induced to bestow particular attention on the study of Therapeutics. The opinions which I formed in consequence of this were some

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time since submitted to the examination of others in a course of lectures. For the benefit of such as might attend these lectures, the Elements now offered to the public made their first appearance about two years ago. It may readily be imagined, that the intricacy of the subject, as well as many other circumstances, would create no inconsiderable diffidence concerning the reception which would be given to a first performance. Even then, however, I ventured to rest my apology upon my intention; and the event has since proved that my fears were in some degree imaginary.

I do not mean to insinuate, that these Elements have escaped criticism. I have heard many observations upon them; I am sensible that not a few of these observations were well founded; and I think that I have on many occasions profited by them. This

may be determined from the alterations which I have made. If any one will take the trouble of comparing the present with the former edition of this book, although he may not be able to judge of the pains which alterations have cost me ; yet he will easily be sensible that I have in many places endeavoured to correct it.

I have not indeed altered every thing to which objections have been made. In some particulars I still continue to differ from authorities which I highly respect. With regard to these I cannot help still retaining my former sentiments ; and it is certainly no compliment to adopt an opinion from any other motive than conviction. While I differ from respectable authority, however, it is still some satisfaction for me to think that, if I be wrong, I am not single in opinion.

These Elements are divided into two parts: The first treats of Therapeutics in general; the second, of particular classes of medicines.

In studying any subject, the first requisite undoubtedly is, to fix upon some plan, by prosecuting which, inquiries may be conducted with facility and advantage. After examining many writers on the Methodus Medendi, I could not help thinking, that such a plan was in this subject particularly wanting. This part, therefore, appeared to merit particular attention.

In the investigation of a plan, I have endeavoured to improve upon the labours of former writers. That which is here offered appears to myself less exceptionable than theirs. But of this the reader could only judge from a full view, both of the

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plan itself, and of the principles upon which each part of it proceeds. I have, therefore, given a detail, at length, of the various arguments which may be advanced in support of every branch of it; and have, besides this, attempted to refute the most obvious, and, what I think, the strongest objections which can be urged against it. How far I have succeeded, others must determine. But I am persuaded, that those who consider the importance of this branch of the subject, will neither be surprised at the attention which I have bestowed upon it, nor at the length to which it is extended.

In the second part, I have endeavoured to give a complete view of the general doctrines of cure, or first principles of the practice of physic. Every class of medi-

cines is there considered by itself. In treating of each, I have endeavoured to point out the primary effects which it produces ; the changes in the system which happen in consequence of these effects ; the different orders into which it may be divided ; the purposes to which it can be applied in the cure of diseases ; the circumstances determining the choice of orders ; the cautions to be observed in its employment ; and the morbid affections by which it is contra-indicated.

In considering each of these heads, I have confined myself to simple assertions without either proofs or illustrations. Both these would perhaps have been necessary for obtaining the assent of the reader to many things here assumed as facts. But, had such discussions been introduced, this book, in place of Elements, would have

swelled into a system of Therapeutics. Although, however, it would have been inconsistent with my plan to have hinted at any arguments with a view to establish the probability of doubtful assertions; yet I have always endeavoured to express the propositions in such terms as to render them easily intelligible without explanation. Those who hear the proofs I can offer, will alone be able to judge how far they are satisfactory. Those who only peruse the following pages, will not, I hope, condemn every view here given, which may differ from their own opinions, upon the supposition that nothing can be alledged in support of it.

This treatise is chiefly calculated for the benefit of those who may hereafter attend

my lectures. I persuade myself, however, that it will not be altogether useless to others who may give it an attentive reading. Those who are anxious to arrive at truth will never be unwilling to hear and examine different opinions. To such as have already bestowed attention upon this subject, it may serve in some particulars to confirm, and in others to correct former views. To such as are beginning the study, it may save somewhat of that time and labour which it has cost me to bring it to its present state.

I am far from imagining, that either the plan which I have here proposed is unexceptionable, or the account of particular classes free from imperfections and deficiencies. Sensible of the doubts and diffi-

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culties which perplex all medical enquiries, I am well convinced that it could never be brought to such a state by the utmost labour or pains I am capable of bestowing upon it. I flatter myself, however, that, from future observations, I shall hereafter be able to form more just and correct notions of this important subject; and, if these Elements shall ever make their appearance in a third edition, I hope it will not be without improvement. But, it would argue no less an unwarrantable contempt for the opinion of others, than an inexcusable disregard to my own character, were they not, as they now stand, as perfect as I am at present able to make them.

How far in this condition they may be of use for understanding my lectures, those

who hear them will best be able to judge. How far they may be of service from perusal, the candid reader must determine. In the award of both I am ready to abide with respectful submission.

C O N T E N T S.

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OMNEM quasi cognitionem medici colligit,
et ad ultimum artis salutaris finem ducit
Therapia generalis. In ea itaque explicanda,
primum ostendendum est, quomodo per ra-
tionem et experientiam in praemissis discipli-
nis acquisita cognitio nunc ordine apto dispo-
natur, quo utilia, et certa subtilius tantum
disputatis, et minus certis praferantur.

LUDWIG.

ELEMENTS
OF
THERAPEUTICS.
PART FIRST.

CHAP. I.

*Concerning the present State of MEDICINE
in general, and of the METHODUS ME-
DENDI in particular.*

ARTS must have been, in some de-
gree, coeval with the existence of
Man. An attentive consideration of the
genius of the human race, and of the cir-
cumstances in which they are placed by
nature, affords sufficient arguments for e-

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stablishing the probability of this assertion. If, from thence, a conclusion can be drawn concerning the antiquity of any art, it certainly may with regard to that of medicine. The art of medicine proposes for its end, the preservation of health, and the cure of disease. As the attainment of this end is so intimately connected with the happiness of mankind, there is sufficient reason for believing, that medicine would claim their attention, even prior to the earliest date at which it can be proved to have been exercised from the testimonies of records or tradition. Its origin, therefore, may justly be placed in the most distant antiquity.

The exercise of this art is impressed, by instinct, on the brute creation, dictated to mankind by the first dawns of rea-

son, and daily enforced by motives of humanity. It cannot then seem surprising, that it should have been cultivated without interruption, from its first introduction to the present time; and that every succeeding practitioner should have endeavoured to avail himself of the improvements made by his predecessors. The importance of the end proposed by medicine, furnishes sufficient proof that its cultivation and improvement must have been uniformly prosecuted with the utmost care and assiduity. A just sense of the benefit of health, an inherent aversion to pain, and sympathy for the sufferings of others, would naturally inspire such attention.

Arts, in general, have been improved in proportion to the time during which they have been practised, and to the attention

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bestowed upon their cultivation. Medicine has been alledged to be an art of the highest antiquity, and to have been cultivated with the utmost attention. Were any judgement, then, to be formed of its present state, from the progress which other arts have made in similar circumstances, it might naturally be concluded that, long before this, it should have arrived at a very high degree of perfection and certainty.

But, in judging from the real state of the fact, a very opposite conclusion must be drawn. It cannot be denied that medicine, although cultivated with every advantage which could be supposed to forward its improvement, is still, at best, but a conjectural art.

This conclusion may indeed seem paradoxical to those who content themselves with a superficial view of the subject. But it will not appear strange to any one who has seriously considered the texture of the human frame. The extent and intricacy of an art which proposes to regulate the motions and rectify the errors of an animated machine, cannot be judged of from any analogical comparison with those in which inanimate matter only is concerned.

It is not, however, from this, to be imagined, that medicine is an art in its nature so intricate, as to be totally incapable of progress; or that, amidst numberless pretended improvements, there have not been discoveries of real utility. Those who first addicted themselves to the study of this art, must soon have discovered, that a thorough

investigation of every part of it, was an undertaking greatly too extensive for the limited capacity of any one man. From the nature of medicine, it affords an evident foundation for being divided into different branches. Such a division is of as early a date as the first records of the art itself. That improvements might be facilitated, some have employed themselves in the prosecution of one branch, some of another. In this way useful discoveries have been made in every branch of the art. But no one is yet arrived at such a state as to supersede further attempts to improvement. Nor is it to be imagined that all of them have been cultivated with equal diligence and success.

Authors are by no means agreed with regard to the different branches into which

medicine should be divided. The great purposes of the art, however, are the preservation of health, and the cure of disease. The method to be prosecuted for enjoying the first of these, must be left to the prudence of every individual; the direction of suitable means for obtaining the last, is the province of the physician. For the proper discharge of this office, an extensive acquaintance with science, in general, is highly requisite. But, among the various branches of medicine most intimately connected with its chief intention, Therapeutics, or the *Methodus Medendi*, is universally allowed, by those who have treated of the subdivisions of the art, to merit particular attention.

Therapeutics, or the *Methodus Medendi*, may be defined, to be that branch of

medicine which treats of the operation of the different means employed for obviating diseases, and of the application of these means. Taken in this sense, it may be considered as delivering the general doctrines of cure, or first principles of practice. It is indeed intimately connected with the practice of medicine, strictly so called, and with the *materia medica*. But it differs from the former, in as far as its object is not the treatment of particular diseases; and from the latter, as it does not comprehend the natural or medical history of particular substances.

Having thus defined this branch of medicine, it is unnecessary to observe, that it must be considered as of the highest importance. A knowledge of the operation of medicines is, as it were, the intermedi-

ate link between theoretical reasonings and practical conclusions. By this alone a connection can be traced between the facts of the empyric, and the rules of the dogmatist. Upon this all rational practice must be founded. While, therefore, the *Methodus Medendi* is of great utility in the exercise of the profession, it cannot, at the same time, fail to afford high entertainment to the philosophic inquirer.

From these inducements to the study of this subject, it might naturally be imagined, that it would have been as much improved as any other branch of medicine. Notwithstanding its importance, however, it may be affirmed, that it has hitherto been much neglected, and still remains involved in great obscurity and error.

This assertion may seem extraordinary, as being in some degree in contradiction to the common course of nature. In order to its being admitted, therefore; it may be necessary to offer some proof of its being well founded, and to endeavour to point out the causes from which it has arisen.

The imperfection of Therapeutics is sufficiently evident from the diversity of opinions which are entertained with regard to the operation of almost every medicine. This may, no doubt, in some degree, be ascribed to the difficulty of the subject. But it is also probable, that it is in a great measure owing to its not being sufficiently cultivated. It cannot, indeed, be alleged, that the consideration of this branch of medicine has been entirely neglected. It has often been a subject of inqui-

ry in medical writings, both treated of separately, and as conjoined with other branches. Notwithstanding this, however, it will appear, that it still affords a particular opening for farther consideration. The branches with which it has been conjoined, are, the account of particular diseases, or what are strictly called practical writings, and the account of the properties of different substances, or the *materia medica*. Before taking notice of the writings professedly upon this subject itself, it may be necessary, in the first place, to consider how far a knowledge of it may be acquired from either of these branches.

In writings on the practice of physic, particular diseases are the subject of investigation. After the history and causes of a di-

sease have there been considered, the indications are pointed out by which it may be removed. To each indication is subjoined an account of the different means by which it may be fulfilled, and of the proper method of applying these means. Thus, in dropsy, it is a very general indication of cure to evacuate the water. This evacuation may be produced both by manual operation, and by the use of different internal medicines. For this purpose emetics, purgatives, diuretics, and other similar evacuants, are every day employed. Hence some observations upon these are inseparably connected with the account to be given of the disease. But, in this place, to have attempted the investigation, even of the method in which they produce the evacuation of water, would have been entirely foreign to the subject. Much less

would it have been proper here to have introduced any account of the other effects of these remedies. Thus, it appears, that under the treatment of a particular disease, a full account of the operation of these remedies, by which it may be removed, is not to be expected. The effects which medicines have upon the system, and the means by which they produce these effects, are, by writers on the practice of physic, universally supposed previously known and studied. When, therefore, as a necessary preliminary to the proper and safe use of any mode of cure, we are desirous of being fully acquainted with its effects upon the system, and with the manner in which it produces these; it is evident that some farther knowledge of this subject is necessary, than can be derived from writings strictly practical.

Another branch of medicine with which Therapeutics are intimately conjoined, is, the *Materia Medica*. It may be imagined that the partial view of the subject to be obtained from practical authors will be fully supplied by the writings on this branch. These, however, are not, more than the former, fitted for affording a complete knowledge of the *Methodus Medendi*. To illustrate this, it will only be necessary to survey the present state of the *Materia Medica*.

Were a judgement to be formed of the proficiency made in this subject, from the number of writings which every age has produced concerning it, the conclusion would be, that it had arrived at very great perfection. Could reliance be placed upon the accounts given by almost every author wh

has treated of any particular medicine, this conclusion would be still farther confirmed. But, on the contrary, if any one, in the least conversant in practice, would form an opinion of this matter from what daily observation must teach him, he would not hesitate to affirm, that the dependence which can be had upon these accounts is but slight. Many properties have been ascribed to almost every article of the *Materia Medica*, from inattention, credulity, or cunning; when, in reality, there was no foundation for such supposed virtues.

Besides these, there are other sources of error on this subject, which, although they cannot be detected with equal ease, are, however, not less apt to misguide. Among these, conclusions improperly deduced from

observation, even well founded, may be justly enumerated, and are, perhaps, not the least considerable. When there occurs an undoubted example of the efficacy of any remedy in a particular case, it is but natural to suppose that it will have an effect equally advantageous in others apparently similar. But, from the variety in constitutions, and the material difference in cases seemingly the same, it is by no means surprising that general conclusions deduced [from particular observations should, in many cases, be found repugnant to truth. Hence it is that, even by the most accurate writers on this subject, every remedy has been celebrated for properties much more considerable than it really possesses. Thus, to use the language of a celebrated author, *The Materia Medica*, like

the Augean stable, could not be cleared from its present errors without the labours of a second Hercules. If this be the case, it may be considered as, at least, one objection against an entire reliance on the authors on this subject, for an accurate knowledge of Therapeutics.

But, another and more valid objection may be drawn from the method in which this subject has, in general, been considered. The various articles are here, for the most part, treated of in an alphabetic, or some other similar artificial order. But, a history of the *Materia Medica*, executed upon such plans as these, labours under many inconveniences when used as the means for obtaining an acquaintance with Therapeutics.

Many substances, employed for the purposes of medicine produce upon the body effects very much similar. Hence they have been formed into assemblages, and denominated by general terms, from their mode of action on the body. Examples of such assemblages occur in the classes of Emmetics, Cathartics, and many others of a like nature. From this similarity in effects, it may reasonably be concluded, that the different remedies comprehended under these associations should be fitted to remove the same morbid conditions in the body. But, although any particular indication may be answered by the use of several remedies, it is not from thence to be imagined, that equal benefit will be obtained from the promiscuous employment of any one of them, as tending to produce a

radical cure. On the contrary, it will very universally hold, that particular advantage may be derived from a judicious choice. The circumstances, however, from which alone any judgement can be formed concerning the causes of preference, are only to be learned from a comparison instituted betwixt the articles thus possessed of the same general mode of operation. But it is difficult to do this, when these articles, though naturally conjoined, are, from an artificial arrangement, separated in such a manner, that, between them, attention must be paid to a variety of substances fitted for very different purposes. The difficulty, then, with which the general doctrines of cure can be learned from the history of particular articles, given by writers on the *Materia Medica*, when these articles are

arranged in any artificial order, is too obvious to require any additional proof.

But, besides these objections against histories of the *Materia Medica*, as a foundation for studying the general doctrines of cure, it may be farther alledged, that, in this respect, they are highly deficient. Many medicines, as has already been observed, operate upon the same general principles. Hence many observations, applicable to one of them, may, with equal propriety, be made concerning others. Thus, a proper view of the general principles of operation which apply to a whole class of medicines will entirely supersede the necessity of repetitions under every particular article. On this account, writers on the *Materia Medica* esteem it sufficient to inform their readers of the qualities of any particular sub-

stance, whether it be emetic, purgative, diaphoretic, or the like ; and of the degree in which it possesses these qualities. But, to have endeavoured, under each article, to point out in what manner vomiting, purging, or sweating, are produced, would have been an attempt highly absurd. Hence they have altogether waved such general inquiries.

It must, however, be allowed, that, altho' the consideration of these operations on the system could not, with propriety, enter into the history of the particular articles ; yet many writers on the *Materia Medica* have supplied this deficiency, by previously delivering an account of these general doctrines. But, what they have said in this way, may be esteemed professedly therapeutical, and, in this view, will afterwards

come under consideration. This, therefore, cannot be employed as an argument to invalidate what was formerly advanced to prove the insufficiency of the writings on the *Materia Medica* as a means of studying the general doctrines of cure.

Thus, it appears, that many objections may be adduced against the writings on the *Materia Medica* as a means of acquiring the necessary knowledge of Therapeutics. Of these writings, in general, it may be observed, that, as abounding with errors, as separating the consideration of medicines by nature connected, and as not attempting to explain the general principles of operation, they must be altogether insufficient for this purpose. Hence it appears, that a proper acquaintance with the *Methodus Medendi* is not to be acquired from even

the most complete consideration of those branches of medicine with which it is most immediately conjoined.

After these observations on the branches of medicine in which Therapeutics have been treated of in a secondary way, it now only remains to consider the writings professedly upon this subject. From these a proper knowledge of it may most reasonably be expected. In their present state, however, they seem to be as inadequate for this purpose as those already mentioned.

The number of authors who have treated of this branch of medicine cannot, indeed, be said to be inconsiderable. At the same time, when the writings on this subject are compared with those on the other

branches of medicine, their number will scarce seem proportioned to its utility. It is, indeed, true, that few authors on the general subject of institutions have left this branch entirely untouched. When, however, in their writings it obtains a separate consideration, it is, for the most part, put posterior to the extended and intricate subjects of physiology and pathology. From this circumstance, it is usually passed over with less attention than its importance merits.

Many of the first writings on this subject, although not exceptionable upon account of their brevity, are, however, liable to objection on another account. Those which were prior to the discovery of the circulation, and of the general laws of the nervous system, from which the operation

of medicines must, in a great measure, be accounted for, can be consulted with but little advantage. It is now necessary to reject opinions which, from the ignorance or mistaken notions of those who proposed them, with regard to the leading principles in the oeconomy, will, without a very minute examination, appear ill founded. What is to be expected, therefore, from writings on this subject, must be derived from those of a modern date.

It cannot, indeed, be affirmed, that the *Methodus Medendi* has, of late, been entirely neglected. But, the most esteemed authors on this subject, who have written since the laws of the system were better known, have either belonged to the *Stahlian* sect, or have implicitly adopted the

mechanical philosophy. To enter into any particular detail of what may be esteemed exceptionable in their doctrines would be entirely foreign to our present purpose. It may, however, without hesitation, be affirmed, that the opinions of neither are, by any means, to be universally admitted. Upon the justice, however, of their particular theories, the truth of what they have delivered concerning the operation of medicines, must totally depend. Hence their writings will, in many particulars, be disregarded by all who are not implicit followers of their tenets. Thus, the modern writings upon this subject are, in many respects, not less exceptionable than those of a more ancient date. From all that has been said then, it appears, that what has expressly been written upon the subject of Therapeutics, must be consider-

ed as an insufficient foundation for obtaining such a knowledge of this branch of medicine as is necessary for the cure of diseases, when meant to be followed out upon consistent or rational principles.

If what has been advanced, then, be well founded, it follows, that the writings professedly therapeutical are to be esteemed imperfect and defective. And, it may farther be concluded, that these deficiencies and imperfections can neither be supplied by the writings on the *Materia Medica*, nor on the practice of medicine; the only sources from which it could be expected. There will remain then little difficulty in assenting to the proposition formerly laid down, that this branch of medicine, notwithstanding its utility and intimate connection with the grand purpose

of the healing art, is still involved in great obscurity and error. Hence the imperfect state of this subject, as well as its importance, may be considered as powerful inducements to attempts towards farther improvement.

C H A P. II.

*Concerning the general Distribution of the
different Articles of the METHODUS ME-
DENDI.*

THE practice of all ages has afforded numberless observations concerning the effects resulting from almost every article employed in the cure of diseases. Many experiments have been made with a view of ascertaining the properties of particular medicines. From these sources, it may readily be imagined sufficient data are afforded for carrying the theory of the action of remedies to as great a degree of perfection as any other branch of the medical art. For improvement on this sub-

ject, therefore, what is principally required, is not so much the addition of new facts, as a judicious selection of such as will admit of undeniable proof, and a proper application of them to the formation of general rules. Hence the first step to improvement will consist in the formation of a proper plan for generalizing facts.

In attempts for this purpose, authors have, for the most part, aimed at general systematic arrangement. With this intention, the subject is usually introduced with a *Clavis Classium*, exhibiting a general view of the whole. When such views can be obtained in perfection in any branch of science, they are unquestionably of very great utility. Even in their most imperfect state, they are never without some advantages. In this condition, they will of-

ten serve to give a more clear and connected view of the subject than could otherwise be obtained. But it must, at the same time, be observed, that every systematic arrangement, in any degree imperfect, is attended likewise with disadvantages. Hence, before it can with propriety be admitted, while in this condition, it is necessary to consider which of these preponderate. And if, from examination, it be found, that the disadvantages are superior, it must certainly be considered as inadmissible. This indeed cannot be deemed any sufficient reason for discontinuing attempts to improvement; but, it will afford a conclusive argument against adopting any scheme in such a state of imperfection, as to give erroneous ideas of the subject which it is intended to illustrate.

This assertion, with regard to methodic arrangement in general, will not be questioned. If then it shall appear, that even the best general views hitherto given of this branch, are in such a state of imperfection ; the conclusion against adopting them will be sufficiently obvious. To determine this, therefore, it becomes necessary to examine to what conclusions the best arrangements on the Methodus Medendi naturally lead. It may perhaps seem extraordinary to affirm, that the most accurate views hitherto given of this subject, are not only inadequate for the purpose proposed by them, but tend also to give an erroneous idea of the operation of medicines. Upon attentive examination, however, it will appear that this assertion is by no means without foundation.

General systematic arrangement supposes that the subject to be treated of can be fully comprehended under a few separate and distinct heads. These are to be branched out by subdivisions till they arrive at individuals. In forming these subdivisions, it is necessary that every inferior association should be a proper constituent part of the more general head, to which it belongs. It must, at the same time, remain separate and distinct from every division on a level with it, and from every superior division from which it is not directly deduced. While this precision can be obtained, the end proposed by methodic arrangement will be fully answered. But when articles, which should be separate and distinct, come to be confused and blended with each other, the intention of system is entirely

frustrated. These observations are sufficiently illustrated and confirmed from the use which has been made of systematic arrangement by Botanical writers.

If accurate and precise distinctions between different members of a division be necessary for obtaining the advantages of general system, little benefit can be expected from it in the Methodus Medendi. The nature of this subject will by no means admit of division with these conditions. This will appear sufficiently evident from the examination of any systematic arrangement hitherto attempted.

In the least exceptionable arrangements the general division commonly instituted is, that medicines act either upon the solids, or upon the fluids. It is indeed true,

that every medicine may be reduced to one or other of these heads. But, where there subsists a connexion so intimate as that betwixt the solids and fluids of the human body, it is almost impossible to conceive that the smallest change can be produced upon the one, which will not, in some degree, affect the other also. If this be the case, every medicine may, with propriety, be referred to both heads. Thus, the best ground for distinction of which the nature of the subject will admit, even in the first steps toward method, must be entirely rested upon the vague and uncertain footing of a superior degree of action. This however can never be granted to be a solid foundation for precise division.

From what has been said, then, it appears, that the nature of the Methodus

Medendi does not admit of any certain characteristics by which particulars comprehended under one branch, may be distinguished from those referred to another. It must be allowed that arrangement, without these, in any branch of science, if not apt to mislead and retard its progress to a more perfect state, has, at least, no tendency to forward its improvement. But it appears that even the foundation of methodic arrangement, on the subject of Therapeutics, is liable to objection. Although, therefore, it should be alledged that a systematic view of the subject, thus defective, will be attended with no bad effects ; yet it may with confidence be affirmed, that it can be productive of no advantage.

But the mere want of utility is not the only objection which may be urged against

a systematic view of this subject when prosecuted to inferior divisions. Were any reliance to be put upon this arrangement when carried down into the classes into which medicines are usually divided, in place of being attended with any good effect, it would be apt to mislead in enquiry, and to misguide in practice. This may be proved by considering the conclusions which would be formed concerning any class of medicines, even from the best systematic arrangements yet extant. A striking example occurs in the class of epispastics. These remedies, in the first place, have been referred to the general division of medicines acting upon the fluids, in opposition to those acting upon the solids. They have next been limited to the tribe of evacuantia in opposition to the alterantia. And, lastly, they are referred to the

subdivision of medicines evacuating serum, in opposition to those evacuating saliva, urine, perspirable matter, or other secreted fluids. From this method, then, of arranging epispastics, we would undoubtedly be led to conclude, that they are a set of remedies which affect the body only; that there they act upon the fluids alone; that the sole change they produce upon these is a diminution of their quantity; and that this diminution proceeds entirely from a discharge of serosity. Even the slightest observation, however, will be sufficient to convince us, that the greatest part, if not the whole, of these conclusions are entirely without foundation.

The action of blisters, from this view of the matter, is merely corporeal. But daily experience affords sufficient proof

that they act upon the mind as well as upon the body. The power which they possess of exciting pain, is neither less certain, nor, perhaps, less useful, as the means of obviating morbid affections of the system, than that of evacuating serum. With an intention to excite pain, they are frequently indicated, and often employed.

Besides this, the changes which blisters produce upon the body are by no means confined to the fluids alone. The solids of the body, from their action, are manifestly and variously affected. Even the evacuation of fluids which they occasion, can be considered as nothing else but the consequence of an increased action in the solids. Every sensation has some effect upon the solids. This particularly holds with regard to painful sensations. It can-

not, therefore, be imagined, that one so considerable as arises from the use of blisters will take place without their being remarkably affected. Whether, then, a judgement be formed from the nature of blisters, or from their effects, it must appear an undeniable fact, that they act upon the solids of the body, as well as upon the fluids.

Farther, the change which blisters produce upon the fluids does not merely consist in a diminution of quantity. They may, with great justice, be reckoned to alter the state of the fluids, as well as to evacuate. They do not discharge a portion of fluids from the body in that state in which they circulate in the larger vessels. The abstraction, which here occurs from the general mass, consists entirely of a particular

part of the fluids. It is, however, an established fact, that if, from any heterogeneous fluid, there happens a diminution of one component part only, the nature of the remaining mass must be changed. Hence, they are improperly set in opposition to those medicines termed the Alterantia.

Lastly, viewed as evacuant, they can, by no means, be considered as a set of medicines merely discharging serum. In many cases, the discharge produced by epispastics, especially if kept up for any considerable time, becomes manifestly purulent. There can be no question that, when this is the case, something more than serosity is discharged by them. There is a presumption that it is not serum only which is evacuated, even when the discharge is,

to appearance, most serous. It is a difficult matter to deprive the serosity of every mixture of the saline parts, and of the coagulable lymph; and, in the ordinary cases of blisters, that the serum discharged, contains a proportion of these, is not to be doubted.

Thus, it appears, even from the most superficial view of the nature of blisters, that their action is much extended over the whole system. Their employment in diseases, therefore, from a persuasion that they act merely as evacuants of serum, would be a practice, not only unsuccessful, but rash, and, perhaps, even dangerous.

Hence, the consequences which result from systematic arrangement in a state of such imperfection, when applied to the Me-

thodus Medendi, are sufficiently manifest. The opinion which would be formed of blisters, or indeed of any other class of medicines, from conclusions deduced from thence, would be erroneous in almost every particular.

If an erroneous idea only can be obtained from methodic arrangement when applied to the investigation of the nature of medicines, it is needless to observe, that reliance upon it could serve no other purpose but to misguide in practice. Methodic arrangement, indeed, upon the supposition that the nature of this subject would admit of a system less exceptionable, might be of the greatest utility in giving a clear and connected view of the means of cure in general. But, in the present situation, it is evident, that no general system could be

followed which would be useful, or even not prejudicial. Without attempting the difficult work of correction, it may be proper to consider how far this subject may, with advantage, be treated on a different footing.

It has already been observed, that many remedies have, in their nature, a great deal in common with each other. These, although their effects be not in every particular the same, operate very much upon the same general principles. Hence they are, in a great measure, fitted for the same general intentions of cure. The different individuals, thus agreeing in their nature, and, on that account, assembled into a class, may be considered with greater advantages taken together, than disjoined. By this means, the labour which would otherwise

attend the investigation of the properties of remedies, will be greatly shortned; and repetitions, which, were every article to be considered separately, would be almost endless, will be in a great measure avoided. It will naturally occur then, as a first requisite in treating this subject, that the different articles be distributed into proper associations.

But while, on the one hand, it would be tedious and improper to treat of the operation of every mode of cure by itself; so, on the other, there would be an equal error in the formation of very general or extensive classes. By this means, indeed, the labour of enquiry might be greatly shortned: But the general doctrines which should be delivered concerning an extensive class of medicines would be by

no means applicable to all the individuals comprehended under it. Hence the distribution of the different articles into such general affociations is liable to objection, as being an imperfect method of explaining the action of particular remedies.

Objections indeed also occur to a distribution into very limited affociations. To these it may be objected, that, in this manner, no proper distribution can be obtained. When, for example, emetics, cathartics, diaphoretics, or such similar classes, are taken as the highest affociations, it may be alledged that there are many individuals which, with equal propriety, fall under several of these classes. From this circumstance, a degree of confusion will not only arise, but the opinion delivered of the operation of these articles will, in the

first instance, at least, be defective and imperfect.

To this, however, it may be answered, that, although there may be individuals, with propriety, referable to several classes, yet the powers which they possess, as operating in one particular way, are so very considerable, as greatly to outweigh their other properties. Where this is not the case, the difference of effects resulting from them, in consequence of which they have a title to be referred to more than one class, is produced, either from the quantity employed, the mode of administration, particular management, or some other evident cause. But, where a diversity of effects results from such causes as these, the remedies used may, in fact, be considered as different. In this point of view, there can

be no impropriety in their being referred to more than one class.

Instances of individuals belonging to a plurality of classes, where the seeming inconvenience thence resulting cannot be obviated in one or other of these ways, are but few. When they do occur, the difficulties thence arising are but of small account, if compared to what would have been the consequence of more general associations. In the formation of associations, then, such medicines only are to be reduced to the same class, as answer to a precise and limited definition, as operate upon the same general principles, and as are fitted for the same general purposes, in the cure of diseases. Classes formed with these conditions will indeed be limited in their nature. But, it must be remembered, that,

when medicines are applied to use, if they be employed with any rational intention at all, they are given with a view of operating as belonging to classes not more general. Thus, in every day's practice, nothing is more common than to aim at fulfilling particular indications by emetics, cathartics, or similar classes.

Many are the particular articles employed as remedies. From reflecting upon the number of them, it may be imagined, that associations formed with the conditions above mentioned, would be both numerous and unequal. They will be numerous, because, from the great diversity of individuals, there must be considerable varieties in the general mode of operation. They will be unequal, because, on the one hand,

many individuals are often possessed of the same common properties ; and, on the other, a few not unfrequently operate in a manner peculiar to themselves. But from the latter of these circumstances no inconvenience will result ; and, without the former, truth cannot be investigated. Any objection, therefore, which can be adduced from these sources, against a division into limited classes, must be very inconsiderable ; and, even in this state, it may be considered as unavoidably connected with the nature of the subject.

Besides the objections already adduced against the general plan now proposed, another still remains to be obviated. This system is perhaps less exceptionable from the number and inequality of classes which will fall to be considered, than from the

difficulty which will attend the formation of proper affociations. From the want of a proper knowledge of individuals, the affociations which can be formed, will, in many instances, be deficient, wanting articles, which with propriety should be referred to them. In others, they will be redundant, comprehending individuals which do not properly belong to them. But the inconveniencies resulting from thence are in common to this species of arrangement with every other. They cannot therefore be considered as any objection against it in particular. Difficulties and imperfections will attend arrangement in every branch of science. It would therefore be ridiculous to imagine that they should be wanting in this more than in others.

From what has been said it appears, that the best method of considering this subject is, by reducing the different articles employed as remedies into precise and limited associations. These associations are to be formed from a general sameness in properties. They may be considered as in some degree analogous to the natural orders in Botany, as being founded more upon the general character, than upon any striking or artificial mark. By a proper consideration of the independent associations thus formed, treating of each separately, and as unconnected with every other, the inconveniencies, on the one hand, resulting from a particular investigation of the properties of every article by itself, and, on the other, from general systematic arrangement, will be equally avoided. This method will neither tend to convey any er-

roneous idea of the operation of medicines, as occurs from the latter, nor will it lead to prolixity and repetition, by disjoining the consideration of articles naturally connected, as is the consequence of the former. Although, therefore, it cannot be supposed to be entirely free from objections; yet it appears to be the mode of arrangement best fitted for delivering the general doctrines applicable to the different remedies employed in the cure of diseases.

CHAP. III.

Concerning the different Classes into which Medicines may be distributed.

THE great improvers in medicine, as well as in the other branches of science, seem universally to have been desirous of associating together things which, in their nature, appear to have an obvious connexion. No branch of science affords a more manifest foundation for associations than that which treats of the different articles employed for the cure of diseases. To this probably it is owing, that a distribution of medicines into classes is at least as ancient as the first medical writings now extant, perhaps as the art of medicine itself. From the prevailing passion for no-

velty, as well as from attempts to improvement, it may readily be imagined that, during a period so extensive as that in which medicine has been practised, many different distributions would be formed, and, of course, a variety of general terms introduced for expressing these. The affociations thus formed have very universally been attempts towards natural orders. They are, therefore, an obvious foundation from whence may be selected those classes under which it has been alledged the consideration of Therapeutics may be conducted with greatest advantage.

It has already been observed, that the affociations formed by different writers, and the terms used to express them, are numerous. Many of these divisions are intended merely as improvements upon for-

mer ones. All the classes, therefore, which have been introduced by different authors, are by no means to be promiscuously adopted. It would, however, be no less tedious than disagreeable, to assign particular objections against every association not afterwards to be admitted. But it is not from thence to be imagined, that there are no reasons directing to a proper choice. It will by no means be sufficient, out of the numerous associations which have been formed, to adopt a few at random. To point out the foundation upon which a choice has here been made, it may be necessary briefly to mention what is principally required in the associations, and to assign such general reasons for rejection, as will most readily apply to particular cases. By this means a foundation will be laid for determining with what

propriety some classes are here admitted, and others rejected.

For answering the end proposed by distributing the *Methodus Medendi* into independent associations, it is necessary that every class adopted be a natural one. By this it is to be understood that the articles comprehended under it produce the same effects, and that their operation is to be accounted for upon the same general principles. The most easy method of obtaining associations with this condition would be by admitting a great number, each comprehending only a few articles. But, by having recourse to this expedient, if carried to any great extent, the intention of forming associations would be entirely frustrated. Hence it becomes a second requisite,

that every association should be as general as is compatible with its being natural. For this purpose, it is particularly necessary to avoid the substitution of what should only be esteemed proper subdivisions of classes for classes themselves. Under a few classes, with these conditions, many individuals will be comprehended. But, that a complete view may, in this manner, be had of the subject, a third condition is requisite. It is necessary that all the classes taken together, should comprehend every individual, with propriety, referable to the *Methodus Mendendi*.

From the different requisites mentioned above, the foundation upon which the selection of classes must proceed, is manifest. These conditions may be obtained, as far as

the nature of the subject will admit, from adopting the following twenty-four classes :

1. Emetics.
2. Cathartics.
3. Diaphoretics.
4. Epispastics.
5. Diuretics.
6. Expectorants.
7. Errhines.
8. Sialagogues.
9. Blood-letting.
10. Emmenagogues.
11. Anthelmintics.
12. Lithontriptics.
13. Antacids.
14. Antalkalines.
15. Attenuants.
16. Inspissants.
17. Antiseptics.

18. Astringents.
19. Emollients.
20. Corrosives.
21. Demulcents.
22. Stimulants.
23. Sedatives.
24. Antispasmodics.

That these classes may fulfil the conditions formerly pointed out, it is necessary that they should constitute what may be esteemed natural orders of medicines ; and that they should comprehend all the particular remedies employed for the cure of diseases. How far these purposes will be answered by the classes here selected, can only be determined by considering the account hereafter given of each ; and by comparing a list of the means of cure now em-

ployed, with the particulars which may be comprehended under them.

After adopting these general associations, it naturally follows, that some reasons should be assigned why many others have been set aside. Without attempting to descend to particulars, the causes of rejection may be determined from one or other of the following general objections.

What may be mentioned as the first, and will perhaps apply as the most extensive cause of rejection, is the impropriety of many assemblages. Not a few general terms are employed by medical writers for denominating classes of medicines where in reality there is no foundation for associating together the different articles comprehended under them. All these classes, in-

deed, have been formed upon a supposition that the individuals which they comprehend possess some common property. Frequently, however, the proof of such a property is rested merely upon supposition. But supposition, it will readily be allowed, is by no means a proper basis for the formation of associations. There can be no question then with regard to the justice of rejecting classes of medicines established upon so uncertain a foundation.

But, besides the classes founded upon supposed effects, there are others also, which are exceptionable upon the score of impropriety. Classes of medicines founded upon a single effect, although it may be established and certain, are equally liable to objection. A single effect may be produced in very different ways, and even upon per-

fectly opposite principles. Upon such a foundation as this, therefore, medicines will often be connected, which in reality should be disjoined. A single effect can by no means be considered as a sufficient basis for a natural association, where all the articles must operate upon the same general principles. Hence, upon the plan now proposed, classes of this nature necessarily fall to be rejected.

Another cause of rejection arises from the extent of classes. Many associations, in other respects sufficiently proper, have been set aside, as being more general than the plan here adopted will admit of; others, as being too limited. After what has been said with regard to the requisites of classes, when the *Methodus Medendi* is to be considered upon the plan here proposed, any

farther illustration of these grounds of exclusion would be unnecessary. Of the former, an example occurs in the class of medicines termed Deobstruents, and of the latter, in that of Carminatives.

The last ground of rejection to be mentioned, and one which is sufficiently obvious, arises from the diversity of terms employed to express associations. Many general terms used by different authors are set aside, as being synonymous with others here adopted, and in reality already admitted. Examples where this is the case will occur from the most superficial view of the list which has been given. To point out any particular instances, therefore, would be altogether unnecessary. From these general reasons, it will be no difficult matter to determine why the

classes here employed have been admitted in preference to others.

Having thus attempted to point out the grounds for selecting the associations here adopted, it may next be expected that some reason should be assigned for arranging them in the order in which they have been placed. At least, it may occur as a question, whether this order be merely accidental or intentional. From what has already been said with regard to the general plan here proposed to be followed, it may be concluded that this circumstance is very immaterial. Each class is to be considered as independent and separate from every other. The order, therefore, in which they follow each other would scarce seem

to merit attention. Notwithstanding this, however, there are reasons why one order is in some degree preferable to another.

From the objections which were formerly adduced against general systematic arrangement, it appeared that, in its present state, it could not be admitted in this subject without manifest prejudice. But, it must be allowed, that the same advantages may, in some measure, be obtained from considering, immediately after each other, classes in their nature somewhat similar, as from subjoining to each other, the account of particular articles belonging to the same class.

Besides this, one order is better fitted to facilitate the explanation of classes than another. In the animal machine, indeed,

there subsists what may be stiled a circle of causes. Yet, the consideration of some classes will readily afford data upon which subsequent ones may be explained. The reasons, therefore, why one order in placing the classes is preferable to another, are sufficiently manifest. The primary effects of medicines, as directly exerted upon the solids, the fluids, or the sentient nerves, are the general principles which, although not strictly or implicitly followed, have chiefly regulated the formation of the list here given.

C H A P. IV.

*Concerning the Investigation of the Nature
of Classes.*

FROM what has already been advanced, it appears, that, in attempts towards the improvement of Therapeutics, the first object of attention is, the distribution of the different articles into separate and independent associations. These being formed, it will naturally occur as the next requisite, that some proper plan should be delivered, upon which the general doctrines respecting each may be fully investigated.

To point out the most proper plan for considering particular classes of medicines,

is a matter perhaps not less difficult than the distribution of individuals for the formation of them. But, while an order altogether unexceptionable is not to be expected, there are perhaps few plans which have not some advantages. To obtain these in as high a degree as is consistent with the nature of the subject, is an object both attainable and important. For this reason it well deserves consideration.

Many advantages may undoubtedly be derived from delivering the general doctrines respecting classes on a proper plan. But the end principally to be aimed at is to conduct the consideration of each class in such a manner as to obtain a full and connected view of the operation of the different articles comprehended under it. From thence only can those purposes to

which it is applicable in the cure of diseases, be with ease determined.

To obtain this end, it will be necessary to consider, under a separate and distinct head, what may be termed the nature of each class. Under this general head is to be comprehended the whole theory of the operation of a class, as far as that can be deduced from obvious facts or undeniable observations. That a more distinct view may be had of the nature of any class, it is particularly necessary that the enquiry be not perplexed with any remarks upon the supposed or real purposes to which it can be applied in the cure of diseases. The effects of any class of medicines, from which alone its nature can be investigated, are those which it will produce in the animal frame, whether in a sound or morbid state.

By fair deductions from these only it can be applied with a view to obviate or remove morbid conditions in the body. Under this head of enquiry then, the general effects of any class are alone the subject of examination.

This method of attempting to lay a foundation for investigating the use of any particular class of medicines is by no means to be considered as entirely free from objections. Many varieties in the operation of medicines are produced by morbid conditions in the system. By confining the enquiry to the consideration of general effects, these are in a great measure excluded. To this plan then it may very naturally be objected, that the operation of many medicines in the cure of diseases depends entirely upon the existence of pecu-

liar morbid states. It is frequently, in consequence only of a particular state in the system, that medicines produce those changes which are fitted to remove a morbid affection occasioning a particular disease. It may therefore be concluded, that this head of enquiry cannot, with propriety, be entirely limited to general effects.

That, in some instances, this is really the case, is undoubtedly true. Hence, in considering the nature of classes, an absolute exclusion of morbid conditions will not, in every case, be practicable. But these effects will, in most cases, be treated of with greater advantage, when the application of the class to the peculiar morbid condition on which they depend comes to be explained. Where, therefore, the consideration of these, as well as extraordina-

ry phaenomena which may arise from singularity in constitution can admit of being delayed, they will be best considered when the use of the class comes to be the subject of investigation.

By this means, that confusion which would arise from blending the general with the particular effects of a class, will be avoided. At the same time, the consideration of the effects will not be less compleat. The facts then chiefly to be employed in explaining the nature of any class of medicines, are those effects which it most generally produces in the system. The consideration of morbid conditions is only to be introduced in cases where, from the nature of the class, its action entirely depends upon the presence of some particular state in the system.

Having thus, in a general way, mentioned the subject of consideration under the nature of each class, it will next be necessary to point out the proper subdivisions of this general head. Before entering into any detail of the effects of a class, or attempting to deduce any conclusions from thence, it will be necessary to determine of what articles it properly consists. On this account, in the enquiry into the nature of every class, it is necessary to begin with a definition.

The marks by which any class of medicines can be defined, are undoubtedly its most general and obvious properties. These will not only be most readily detected, but, besides this, are necessary to render the definition so extensive as to apply to all the individuals which are meant to be

comprehended under the association. But, in order to render a definition strictly logical, this is by no means all that is necessary. A proper definition should not only apply to every particular which is intended to be referred to the term defined, but should likewise exclude every thing not meant to be comprehended under it. It is however certain, that the general and leading properties of different classes of medicines are not unfrequently possessed by substances which cannot, with safety or prudence, be employed to answer the purposes for which these classes are intended. The general and leading properties of classes then, will not, in every case, be of themselves sufficient to constitute a proper definition.

If the different articles of the *Methodus Medendi* are to be considered under inde-

pendent classes, it is necessary that the definition of each should be limited and precise. But, if this precision cannot be obtained from the general properties of the class itself, other characteristics must be sought for. The precision necessary in a definition will, in such cases, be had, from the introduction of a clause, for the exclusion of those substances which may most readily be blended with the class. The most obvious ground for this is any property by which these substances are rendered unfit for answering the purposes of the class. Hence, for obtaining a proper definition, where the general properties of the class are insufficient, negative distinctions must sometimes be introduced.

After a class has been properly defined, the next subject of investigation naturally

presenting itself, is an account of the primary or direct effects resulting from the employment of it. This head of enquiry is very universally treated of under the general term of *Modus operandi*. When this is adopted as a head of enquiry, the consideration of the more immediate effects is conjoined with that of the subsequent changes in the system resulting from these. But, although this be so commonly adopted as a single subject of enquiry, yet, to evince that there is in nature a foundation for a division into the two branches now mentioned, it will only be necessary to have recourse to an illustration from any particular class. Thus, in the case of Emetics, it will readily be allowed that there is a material difference between the action of any individual belonging to the class as tending to produce vomiting, and the ef-

fects of vomiting when produced. It is evident, therefore, that the division here proposed is by no means imaginary.

But, it is not more evident that there is in nature a foundation for this division, than that advantages will result from its being instituted. In this way the natural progress of effects will be accurately observed. Obvious facts will be separated from conclusions to be obtained only by the help of reasoning. And, as the indications of cure to fulfil which any class of medicines can be employed, are very generally deducible from the more permanent changes induced in the system, the principles upon which they are founded will be less disjoined.

It is not, however, to be imagined that, in

every case, a distinction can be accurately traced betwixt the two branches here mentioned; or that the precise limits of either can be ascertained. The direct effects of medicines, and the changes they produce in the system, are in a continued series, one depending on another. What therefore, in one point of view, is to be considered as an effect, in another must be looked upon as a cause. Hence, in many cases, it is impossible to say where the proper point of partition between these divisions should be fixed. But, while no inconvenience will result from referring those that are doubtful, either to the one head or the other, manifest advantages may be obtained from separating those which evidently belong to different subdivisions. The investigation of the primary or direct effects

of a class, therefore, must be allowed to merit a separate consideration.

In considering the direct effects produced by classes of medicines, several circumstances are to be had in view. It is first necessary that they should be enumerated. The primary effects which are produced by any class of medicines can be derived only from one of two sources, either from the accounts given of the operation of the class, or from attentive observations. Having from these sources ascribed any particular effect to a class of medicines, it next becomes necessary to offer a proof that it actually is produced. This will, in general, be no difficult matter. The feelings of the patient, or the testimony of attendants, will be sufficient to prove the reality of by far the greatest part of

the primary effects. Where this is not the case, it may be inferred from the same evidence, that they must of necessity take place.

The reality of the primary effects ascribed to a class of medicines being established, it naturally follows that the causes by which they are produced should be pointed out. These are to be sought for in the qualities of the medicine employed, and in the laws regulating the animal system. From these laws, in consequence of a particular action upon the body, determined effects must follow. Hence, to ascertain the causes from which the obvious effects ascribed to a class of medicines are produced, the laws of the oeconomy, and the qualities of the substance employed, equally claim attention.

The last requisite in treating of the direct effects produced by any class of medicines is, to determine the degree in which they take place. This is a field of great uncertainty. There is no fixed standard by which the comparative degree of effects, as produced by different classes of medicines, can be ascertained. Besides this, the effects produced by the same medicines evidently do not take place on every occasion in an equal degree. It is, however, a matter of consequence that these varieties should be known, as, upon this circumstance, the safe and proper administration of medicines must in a great measure depend. Some opinion may in general be formed with regard to them from the obvious phaenomena attending the operation of a class, and the probable causes by which the effects themselves are produced.

Several arguments were formerly employed in order to shew the propriety of considering the primary effects of medicines as a separate and distinct head from the subsequent changes they produce in the system. At the same time, these two heads are so intimately connected that they naturally run into each other, and are, for the most part, treated of conjunctly under the general title of *Modus operandi*. Even allowing, therefore, that, for the reasons formerly given, a distinction is to be made between the two, yet, it naturally follows that, to the consideration of the former of these, that of the latter must be immediately subjoined. When it is considered, that, from the changes induced in the system by means of any class of medicines, the purposes to which it can be applied in the cure of diseases are immediately deducible, this

must be allowed to be a branch of the subject claiming particular attention. In order to obtain a foundation for rational or dogmatical practice, it is necessary that the changes arising from each class of medicines should be fully enumerated.

Against a full and particular enumeration of these changes some objections may indeed be adduced. It may be alledged, that the enumeration itself is not to be obtained without difficulty, and that the number of changes which, on this footing, necessarily fall to be mentioned, will frequently give rise to considerable perplexity. Besides this, many of them will be, in their nature, so slight, that from thence no indications can be deduced.

On some occasions all these objections

will, indeed, to a certain degree, hold good. But the inconveniences arising from thence are very inconsiderable, and by no means sufficient to out-weigh the advantages which may be obtained from a full enumeration. Improvements in any subject are not to be expected without difficulty. This first objection, therefore, may, with equal propriety, be urged against every means of improving any science. The perplexity occurring from the number of changes, although it may sometimes happen, will be a very rare occurrence. Changes are seldom so numerous as to afford any foundation for this; and, even when they are so, the inconvenience which might be supposed to arise from thence may, in a great measure, be obviated by proper arrangement. Hence it appears that the two first objections may be easily obviated.

A third objection was derived from the inutility of such an enumeration. It is indeed probable, that there are changes in the system induced by every class of medicines which are no proper foundation for its employment, with a view of fulfilling any indication. But, at the same time, they frequently co-operate in the production of effects, to which, when taken singly, they are inadequate. Without an acquaintance with these, therefore, the principles upon which particular indications are answered by means of the class cannot be pointed out. Changes indeed might be mentioned which cannot reasonably be supposed to act even as assistant causes in fulfilling any indication for which the class may be employed. But from them cautions may often be suggested, which are necessary to be observed in the employment of the class.

Nay, in certain morbid conditions, in consequence of such changes, the class may be altogether inadmissible. In either of these views then, it appears that the full enumeration here proposed is by no means unnecessary.

The necessary inquiries with regard to each change may be conducted under the same subdivisions that were formerly proposed for the consideration of the direct effects.

When any affection of the system is mentioned as a change resulting from a particular class of medicines, it is first necessary to prove that, in consequence of the use of the class, it actually does take place. Here, in general, the proof is by no means so easy a matter as in the case of the

direct effects. The changes themselves, for the most part, are neither obvious to by-standers, nor felt by the patient. While this is the case, the marks which may be supposed to indicate their existence are frequently of such a nature that they may arise from different affections of the system. For these reasons, a proof amounting to demonstration, is in many cases not to be obtained. But it often happens, even in the most doubtful cases, that there is a concurrence of circumstances from which the reality of a particular change may reasonably be inferred. If these circumstances have been preceded by a cause sufficient to produce such a change, and are followed by consequences which may easily be deduced from it, the proof, although not absolutely certain, will at least arrive at a high degree of probability. Hence, altho'

certain evidence cannot in every case be obtained to prove the reality of particular changes said to arise from the direct effects of medicines ; yet, where the presumption is founded on probable reasoning, deduced from the circumstances above mentioned, their existence may readily be admitted.

Having determined the reality of every change, as far as the nature of the subject will allow, the next requisite is to ascertain the cause from which it arises. This is to be deduced from the direct effects before ascribed to the class. Here, therefore, it is necessary to enquire in what manner it arises from these. By this enquiry, a more perfect knowledge of the change itself, and a farther proof of its reality, will often be obtained.

These steps will in most cases be sufficient for ascertaining the precise nature of each change. But, that a more perfect judgement may be formed of the extent to which it can with confidence be applied in reasoning, as the foundation of indications, it is necessary that the degree in which it occurs should likewise be known. An attempt, therefore, to determine this, becomes the last subject of inquiry.

From the subdivisions already proposed, it may be imagined, that every thing to be considered under the general head of the nature of the class will be sufficiently explained. By a proper definition, the particular articles which should be comprehended under the class will be ascertained. By considering the direct effects resulting from the class, and the changes of the sys-

tem consequent upon these, its mode of action will be explained, and a foundation afforded, from whence may be deduced those indications which it is capable of fulfilling. But, even supposing a class of medicines to be as natural as can well be expected, yet remarkable differences will often occur among the individuals comprehended under it, especially if they amount to a considerable number. This must infallibly happen, unless so many separate associations were adopted as entirely to frustrate the intention of their formation. From these circumstances, however, it will follow, that what can be alledged concerning the class in general, will by no means be a perfect account of every individual. The most ready means of obviating this inconvenience, before having recourse to the tedious method of studying

the history of every individual, will be, by dividing the class into inferior associations, or what may be termed orders.

The subdivisions of classes, as well as the classes themselves, are to be formed from a correspondence of properties among the individuals referred to them. It is not necessary that the properties distinguishing particular orders should be such as have any tendency to produce the general purposes of the class to which they belong. On the contrary, a ground for distinctions into orders will most readily be obtained from properties altogether unconnected with those by which they produce the effects ascribed to the class to which they are referred. Where particular articles occur, therefore, which may be referred to more than one class, the best founda-

tion for a division into orders will be afforded. Where this is not the case, some leading peculiarity must be the ground for distinction. From these circumstances, the particular orders falling under a class are to be determined, in cases where a subdivision is necessary.

That the subdivision thus instituted may answer the purposes intended by it, an account of the particular properties of each order is indispensably necessary. A correspondence among the different individuals referred to the same order, and the peculiarities which will best distinguish them from others, are not in every case to be discovered from the same circumstances: But those from which they are chiefly to be deduced, are, the kingdoms from which the articles comprehended under the or-

der are taken, the menstrea by which they are acted upon, the form and dose in which they are most commonly exhibited, the treatment necessary under them, and the peculiarities of their operation.

It would be in a great measure superfluous labour to give a complete catalogue of all the individuals comprehended under each order. Besides, this may be considered as more properly falling under the *Materia Medica* than under the *Methodus Medendi*. At the same time, as a proof of the propriety of instituting any division which may be proposed, and as a foundation for determining the justice of the character which may be assigned to any order, it will be necessary to give a few examples of the individuals meant

to be comprehended under it. By the consideration of this fourth head, which is intended to supply defects in the preceding ones, the nature of each class may be fully investigated.

CHAP. V.

*Concerning the Investigation of the Use of
Classes.*

AFTER the nature of any class of medicines has been investigated in the manner proposed in the preceeding chapter, it next follows that some application to practice should be made of the information from thence obtained. This naturally suggests a second general head of enquiry, which may be treated of under the title of the Use of the class. The term Use, as here employed, is not to be taken in a limited sense, nor confined merely to what may be said with regard to the employment of the class in particular diseased states. It is here

to be understood as comprehending the whole general rules respecting its application, and even the consideration of the morbid conditions under which its employment is inadmissible. Under this general head then, many particulars will fall to be considered, and these too of great consequence. A proper plan, therefore, will here be particularly necessary for the attainment of those advantages which may be supposed to result from the enquiry.

The first subdivision which would naturally occur under the general head now pointed out, is an investigation of the effects of the class in the cure of diseases. This will comprehend two parts, an account of the curative indications which may be deduced from the nature of the class, and

observations on its use in particular diseases. It next, then, becomes necessary to point out, how each of these may with greatest advantage be considered; and, first, with regard to the indications.

The term Indication is used, if not by accurate medical authors, at least in common medical conversations, in a very vague and unlimited sense. Before pointing out any plan for their investigation, it will therefore be necessary to say in what particular sense the term is here adopted. The medical writers who have treated of terms with the greatest accuracy have, on this subject, employed three, the *indicans*, *indicatio*, and *indicatum*. That the term *indicatio* may be better understood, it will be necessary to explain it as connected with the other two. By the *indicans* is meant

a morbid state existing in the system which points out the necessity of a change. By the *indicatio* is understood the change which must be produced in the system for the removal of any morbid affection. By the *indicatum* is signified the means by which this change may be obtained.

From the definitions now given, the relation in which Therapeutics stand to the practice of physic strictly so called, is very obvious. In the last of these, we proceed from diseases to indications, and from indications to remedies. In the former, the order is reversed. In both, however, if followed out upon rational principles, indications are the intermediate link betwixt diseases and remedies. This branch of the subject then, may be considered as one method of studying the cure of diseases.

From the account here given of the term indication it is evident, that a variety of particular intentions in the cure of diseases, which are by many termed indications, will be entirely excluded from that denomination. Of this kind, are the removal of a present paroxysm, the prevention of its return, the alleviation of symptoms, and the like. These indeed may with great propriety be pointed out as branches of a general plan of cure. But, since they do not descend so low as to any particular morbid affection, they must be considered as being more general than even the indications themselves. Hence, to stile them Indications is an evident abuse of terms.

The term Indication, when adopted in its proper sense, must always pre-suppose the existence, and even the knowledge of a

particular morbid affection in the system, When, therefore, an investigation is proposed of the indications of cure which may be deduced from the nature of any class of medicines, the first thing required is an enumeration of all the changes which it is capable of producing in morbid affections, provided these changes have any tendency either to alleviate or remove such affections.

In delivering the plan for the investigation of the nature of classes, some observations were made with regard to the sources from whence indications are to be derived. It was alledged, that the only proper foundation from which the application of remedies for the removal of a diseased state can be deduced, is a just view of the effects which they are capable of producing

when the body is in a sound state. The changes which medicines can produce in morbid affections, are the necessary consequences of those which they are capable of producing in the system in general. From these last then must be derived the indications of cure, to answer which any class of medicines can be employed.

From adopting these as the sources of indication, a difficulty seemingly great may indeed be started. The morbid affections to which the human system is liable are, in their nature, extremely various, and are diversified by causes almost innumerable. While this is the case, every change arising in the system from any class of medicines may be supposed capable of producing many alterations in morbid affections. Hence it might be concluded, that the indi-

cations deducible from the nature of every class of medicines would be very numerous: And that, from such a multiplicity of indications, great confusion would arise.

This would in fact be the case, could the different effects resulting from any class of medicines be produced either singly or combined, at pleasure. But a production or combination of effects in this manner is not to be obtained. There are few classes of medicines in which some effects are not destroyed, or at least more than counterbalanced, by others immediately succeeding. The changes, then, which occur in a slight degree only, may, in point of indication, be entirely over-looked; especially, if other changes, of themselves more considerable, and which have a different ten-

dency, likewise follow from the employment of the remedy. Hence, in attempting to investigate the indications which a class of medicines may be supposed capable of fulfilling, every change which it produces in the system, taken by itself, cannot be looked upon as a proper source from whence they may be deduced. From the more remarkable or leading changes arising from a class of medicines, or from the united effects of several changes, indications can alone, with propriety, be derived. As a foundation, then, for the indications deducible from any class of medicines, it is necessary that the changes which it produces in the system should in some measure be generalized.

A complete enumeration of the indications which may be answered by any class

of medicines, is a very material step towards the proper application of it to use. It is, however, by no means the only thing which, with this view, claims attention. A circumstance, if not of equal weight, at least well meriting consideration, is an illustration of the morbid affection upon which each indication is founded.

There are perhaps few morbid states which may not arise from different causes. It may indeed be said, that, when a particular affection is produced, let its cause be what it will, its nature will still be the same. But, notwithstanding this, when the causes from which a diseased state has arisen are different, its removal may with more ease and greater certainty be brought about in one way than in another. To ac-

count for this is no difficult matter. The causes frequently subsist in the system, and, by that means, render the continuance of the affection which they produce more obstinate than would otherwise be the case. A remedy, therefore, which in certain conditions may with propriety and advantage be employed for the removal of a particular morbid state, can by no means be considered as universally fitted for that purpose. Although, therefore, from considering the nature of any class of medicines, it may reasonably be concluded that, from its use, a particular morbid state present in the system will be removed, yet, it is not from thence to be imagined that it can be indiscriminately used for that purpose. The propriety of employing it is still to be determined from a proper view only of the particular variety of the morbid

affection then subsisting. An illustration, therefore, of the morbid state upon which each indication is founded, will readily be allowed to be a matter of great importance.

In considering indications, after the varieties in the morbid conditions on which they depend are explained, another particular naturally suggests itself, That a more distinct idea may be formed of the use of any class, the manner in which it acts in fulfilling the indications deduced from its nature becomes a necessary subject of enquiry.

This investigation may indeed be considered as already in a great measure superseeded. After the nature of a class of medicines has been fully illustrated, its mode

of action, as fulfilling the indications deduced from thence, cannot be very obscure. But it has already been alledged, that the only proper general sources of indication are the combined effects of several changes. It is evident, therefore, that, from the nature of a class of medicines, no just idea can be obtained of the manner in which any indication is fulfilled, without considering the particular share which is to be attributed to each of the causes from which it is to be accounted for,

Besides this, although an indication be referred to a particular source, and is from thence chiefly to be accounted for; yet it may likewise in some degree be ascribed to other changes resulting from the class. Hence these are not to be entirely overlooked. This, however, would be the case,

were the consideration now proposed to be totally neglected.

A third argument for this enquiry may be drawn from the tendency which classes of medicines, from some particular properties, have to counteract intentions for which they are employed. An indication may often with propriety and advantage be answered by the use of a remedy producing some changes which have a tendency opposite to the intention proposed. To understand its action properly then, it is requisite that these changes should be likewise taken into account. They will, however, be considered with greatest advantage when the means by which the indication is to be answered are inquired into. For these reasons then, an enquiry into the mode in which a class of medicines ope-

rates, as fulfilling particular indications, cannot be considered as superfluous. It will even be a necessary addition to the illustration of the morbid state on which the indication depends.

It is needless to observe, that all the indications which may be pointed out as steps towards the cure of diseases are by no means to be considered as equally important. Some occur in a variety of cases, and are of such a nature that the employment of medicines to fulfil them is every day requisite. Others, on the contrary, are founded on morbid affections which very rarely happen. A few may even be mentioned, upon the supposition of diseased states, which, although conceivable and possible, have never in fact been observed. But, if this be the case, a precise know-

ledge of the extent to which any indication may be applied in practice is to be looked upon as no useless subject of enquiry.

Notwithstanding the seeming utility of this inquiry, before laying it down as a subject of investigation, it may be necessary to consider how far the end proposed is attainable. It can by no means be considered as a matter altogether impossible, to investigate the various diseases, and circumstances in diseases, in which it may be proper to fulfil any particular indication. But every one who is acquainted with the history of diseases knows that the number to which the human body is liable is very great, and that the varieties produced in them by differences in age, sex, temperament, climate, and many other circumstances, are almost innumerable. It must therefore appear

obvious that, to execute this with any tolerable accuracy, would be a work of much greater labour and attention than the result of the enquiry could be supposed to merit. An attempt, therefore, to prosecute this investigation in its full extent, would be not more difficult than ill judged.

From what has been said, it will appear improper to aim at a complete view of all the morbid affections to which every indication may apply. But the application of indications to particular diseases is not on that account to be totally neglected. The importance of any indication, and the attention due to it, may in some degree be judged of, even from a partial view of this subject. Such a partial view may at the same time be easily be obtained. The last step then in treating of each indication will

naturally be, to point out some diseases in which the class of medicines from which it is deduced, may be employed with a view of fulfilling it.

From the various heads under which it has been proposed indications should be considered, a proper idea of every one, deducible from the nature of any class may be obtained. In this manner the application of the class to use may be learned, as far at least as a knowledge of that subject can be derived from theoretical reasoning. The information thus acquired concerning the effects of medicines in the cure of diseases can neither be represented as inconsiderable nor unimportant. But, in medicine, the data from which theoretical reasoning is to be deduced, are by no means in every

case absolutely certain. In our enquiries, therefore, concerning a subject so useful, even the highest probabilities should not be implicitly relied upon. Hence, in considering the effects of any class of medicines in the cure of diseases, after attempting to illustrate and explain the different indications which may be deduced from its nature, another head of enquiry is naturally suggested. With a view to ascertain the truth of what may be asserted with regard to the indications, it will be necessary to add some observations on the use of the class in particular diseases.

By such practical observations, the truth of indications deduced from the nature of any class will be put to another test, besides that of mere theoretical reasoning. From this test it will appear, that theoretical rea-

soning, even when it seems best established, is frequently contradicted by facts. Hence, it] will be a proper check upon those errors to which theory is exposed, from particulars in the oeconomy being either unknown or overlooked. From this test also, the truth of indications inferred from reasoning seemingly doubtful will be often uncontrovertibly confirmed. In either way, therefore, it will serve as a criterion for determining the truth of indications deduced from the nature of the class.

But, practical observations, as recorded by candid and judicious observers, are not merely useful with this intention; while, on the one hand, they serve to crop the luxuriances resulting from theory, they will on the other supply its deficiencies. It has already been observed that indications de-

duced from the nature of classes will often point out practices which are at least uncommon. Although, however, they may be readily inferred from theoretical reasoning, they will frequently want confirmation in practice. On the contrary, it will appear that some classes of medicines are in daily use for particular purposes which cannot be referred to any indication deducible from their nature. It becomes therefore requisite to point out some method for investigating those uses of any class of medicines which a theoretical view of its nature does not suggest. They will most readily be learned from considering the success with which the employment of any class of medicines has been attended in practice. Hence they will naturally be discovered from the enquiry now proposed.

A still farther advantage may be derived from this investigation. Remedies are often prescribed by valuable practical authors, where no theory is given either to point out the intention with which they are ordered, or to explain the principles upon which they operate. Where this is the case, however, the remedy can by no means be employed in similar circumstances with the same freedom or safety, as if these particulars had been known. That proper advantages, therefore, may be obtained from such observations, it is necessary that these deficiencies should be supplied. From the enquiry now proposed an opportunity will be afforded for investigating the principles upon which the benefit obtained from any class of medicine is to be accounted for. Hence it will in some degree at least supply these deficiencies.

From what has been said, it appears, that many advantages will accrue from observations concerning the employment of a class of medicines in particular diseases. They will be a necessary subject of consideration for determining the propriety of indications deduced from the nature of any class; for supplying indications not suggested by that view of the subject, but which it may with advantage be employed to fulfil; and for investigating the principles upon which it operates, where facts concerning its success are established.

It is not proposed, that, under this head, practical observations should be offered concerning the use of any class of medicines in every disease in which it has been employed. This would be a field not less extensive, a subject not less difficult in execution, and a piece of

knowledge, when obtained, not less inadequate to the labour of enquiry, than an attempt to ascertain all the diseases under which any particular indication falls to be fulfilled. The reasons, therefore, which were urged against considering the one on an extensive plan, will apply equally to the other. In this case, therefore, as well as the former, a partial consideration only is meant to be proposed. All the advantages which can be derived from this enquiry may be obtained from considering the use of each class, under a few of those diseases in which it is most commonly employed. The diseases selected for this purpose are to be considered separately, and in any order which the frequent employment of the class with a view to remedy them, or the importance of the effects obtained from it, may suggest.

An investigation of the effects of any class of medicines in the cure of diseases, in the manner which has here been proposed, may seem sufficient to point out the cases to which it can be applied in practice. But it must be remembered, that associations, even the most natural, admit of very considerable varieties. On this account, it becomes necessary that those classes in which the properties of individuals are much varied, should be divided into different orders. Where such a division is made, another subject of enquiry is naturally pointed out, previous to the use of the class. After having established the propriety of employing any class for the removal of a morbid affection, it next becomes necessary to consider what particular order of that class is to be used in preference to others.

The various circumstances respecting the choice of orders may be referred to different sources. Of these, however, the principal seems to be the nature of that change which is required in the system for the restoration of a sound state. As the different orders into which any class of medicines is divided, vary in their effects; so it is but reasonable to imagine that, from this diversity, some orders will be more especially fitted to produce particular changes than others. From considering, therefore, the properties of particular orders, and the different indications for which the class in general may be employed, a judgement may be formed with regard to those purposes for which each order is most particularly adapted.

Another source from which circumstan-

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ces respecting the choice of orders may be deduced, is the degree of change necessary. The highest degree of change which can be produced is indeed in many cases requisite for fulfilling indications. This, however, by no means universally holds. Nor is a change in the system, to a degree as high as particular indications may seem to require in every case, either adviseable or proper.

A particular change induced in the system, when it takes place only in a certain degree, may be the most ready and effectual means for removing a morbid affection. But, when it takes place in a higher degree, so far will it be from being attended with its former effects, that, if it produce any change, its tendency will be still farther to rivet and increase the disease. The influence, therefore, which, from this

circumstance, the degree of change will have in determining the choice of orders, is very evident.

But, besides this, attention to the degree of change is likewise necessary, even in those cases where the highest change which can be produced from a class, is not more than sufficient for fulfilling the indications intended to be answered. It is by no means proper to attempt fulfilling every indication in the most ready or expeditious manner in which it can be done. A change, which, in one case, may with safety and ease be immediately brought about, in another, is only to be wished for by slow and imperceptible degrees. But, where a change in this manner is requisite, it may much more readily be obtained from the use of one order than of another. Among

the circumstances, therefore, which determine the choice of orders, regard must always be paid to the degree of change which any order is capable of producing.

The nature of those changes which any order of medicines referred to a particular class is capable of producing, and the degree in which these changes arise from its employment, will, in most cases, afford sufficient data for determining the choice of orders. But, the manner in which it will be most expedient to answer any particular indication, is by no means in every case the same. From diversity in habit, it is necessary that it should be varied, not only in different patients, but even in the same patient at different periods. From this, therefore, arises another source from which circumstances respecting the choice of or-

ders may be deduced. Hence, to the circumstances derived from the two heads already mentioned, it is likewise necessary to add those suggested by the condition of the patient.

Besides the circumstances referred to those sources, it is not to be denied, that a variety of others will likewise in some degree influence the choice of orders. Of these, however, many occur only in particular cases, and those which are deducible from the heads already mentioned must at least be esteemed the circumstances of greatest weight. Perhaps, in a general view of what respects every class, these only can, with propriety, be considered. Hence, to them, the investigation here proposed is meant to be entirely confined.

The superior advantages which may be obtained from the use of one order in preference to another being thus determined, the choice of particulars will become much more limited and easy. Having determined upon the use of any order, it might seem natural to subjoin the consideration of those circumstances which will principally regulate the choice of individuals. But the data upon which this choice can proceed are alone to be discovered from the history of the individuals themselves. They cannot therefore be investigated from any thing which will be advanced concerning the nature of classes and orders.

But this is not the only impropriety which would follow from immediately proceeding to treat of the circumstances respecting the choice of particular articles.

That order appears still farther to be faulty on another account. Attention to the plan hitherto proposed would naturally point out another subject of enquiry as proper to be subjoined to that last mentioned.

The foundation for a division of the different articles of the *Methodus Medendi* into separate classes is a similitude in the effects of the individuals referred to these classes. The chief advantage to be obtained from this division, is the abridgement of an enquiry which would otherwise be tedious and crowded with repetitions. For the successful administration of every mode of cure, many cautions must necessarily be observed. Some of these may no doubt be considered as peculiar to particular articles. But, from the same reason that associations were formed, it

was proposed that the curative indications pointed out should respect, not individuals, but classes. In like manner, the cautions which are necessary to be observed with regard to every individual taken separately, may be more compendiously delivered by treating of those which apply to the whole class. Having, therefore, considered the general effects of any class of medicines in the cure of diseases, and pointed out these circumstances determining the preference due to the particular orders into which it is divided, it naturally follows that the next subject of enquiry should be an investigation of those cautions which are necessary to be observed for its successful administration.

The multiplicity of circumstances by which the action of medicines may be af-

fects, gives rise to so great variety in the cautions necessary to be observed, as cannot easily be comprehended under a few general heads. A full detail, therefore, of every circumstance which may claim attention in the employment of particular articles referred to any class, is by no means to be attempted. Many of these circumstances, although requisite and proper on particular occasions, could not with propriety be included under the general consideration of a class. Others are not even to be learned from the history of particular articles themselves, but must be rested wholly upon the judgment of the practitioner. But, notwithstanding this, the observations and facts of former practitioners will, in this case, as well as in others, in a great measure facilitate enquiry, and con-

firm the suggestions of prudence. And the many particulars enumerated on this subject will be viewed to greatest advantage when reduced to a few general heads. It follows then that these heads should be pointed out.

The circumstances principally claiming attention, in the employment of any class of medicines, are those suggested by the nature of the class itself. The accidents to be guarded against from this source are, in a great measure, inseparably connected with the employment of the remedy. The observations, therefore, to be made respecting these will apply most generally in every case. Hence, they will naturally fall to be first considered.

The action of every medicine will undergo considerable varieties from peculiarities

in the habit in which it is employed. From this, the cautions to be observed in its employment must likewise be varied. The condition of the patient, therefore, may be deservedly esteemed another source of cautions, and affords a foundation for more numerous observations than the general head last mentioned. Under this head must be comprehended all those circumstances which are suggested, either by the nature of the disease in which the class is employed; by the age, sex, and temperament of the patient; or by peculiarities in constitution, independent of the particulars already mentioned.

To the head of cautions may also be reduced those general rules of treatment which are to be observed during the use of any class. The necessary regimen, then,

may be subjoined to the two already mentioned, as a third branch of this head. To this must be referred the directions which are requisite during the employment of any class, with regard to diet, temperature, exercise, and such like circumstances.

As far as the cautions to be observed with regard to classes of medicines in general are deducible from the sources already mentioned, they may with propriety and advantage be considered in a system of Therapeutics. By a prosecution of the subject to this extent, we may obtain useful information, without being perplexed with intricacies. Many cautions, indeed, which are requisite in practice, those especially respecting particular articles, will not fall under any of these heads. But, as they

could not be introduced without embarrassing the enquiry, they are purposely omitted. The cautions, therefore, to be pointed out under each class must be esteemed those circumstances only which principally claim attention.

Under the general head of the use of a class of medicines, three subdivisions have already been pointed out as subjects of enquiry. These are the effects of the class in the cure of diseases; the circumstances respecting the choice of orders; and the cautions to be observed in its use. The investigation of these particulars, when conducted in the manner here pointed out, will fully comprehend every thing necessary to be learned with regard to those cases in which any class of medicines is to be employed. But, besides the morbid affections under which

the use of any class of medicines is indicated, there are others in which the effects which would result from its employment, are by no means to be over-looked. Under this general head, the consideration of these must likewise be comprehended.

Some classes of medicines are indicated in a few morbid affections only. Others can be employed with advantage in a great diversity of cases. But no class can be considered as universally applicable. It is not to be questioned, that there are many morbid conditions depending upon causes which any change resulting from a particular class will have no tendency to remove. All these, however, are by no means to be viewed in the same light. In many of them, the use of the class may be esteemed in a

great measure indifferent, in others, it may be said to be contra-indicated.

There is probably no morbid affection during the continuance of which, it is a matter of mere indifference whether a particular class of medicines be used or not. In every case where medicines are not actually indicated, their use is undoubtedly to be avoided. Where the only intention of prescription is to satisfy a patient, it is easy to order something, which, although it may be found in list of the *Materia Medica*, does not deserve to be esteemed a medicine. When, therefore, the use of a class of medicines is said to be indifferent in any morbid affection, nothing farther is meant, than that it has no tendency from its nature to increase a disease already present ; while, at the

same time, no benefit can be expected from its employment.

In another set of affections, the employment of a class will be followed by very different consequences. In these, while it does not produce any change for the better, it will have an obvious tendency to augment and confirm the disease. When a class of medicines has, from its nature, this tendency in any morbid affection, it may there be said to be contra-indicated. It is not, however, to be imagined that, where this is the case, its use is always to be forbidden. Particular circumstances will often occur where, in a diseased state, the bad tendency of a medicine in one way is more than counter-balanced by the benefit to be derived from it in another. Diseases, or states in diseases, then, in which a class of medicines

is said to be contra-indicated, are not meant to be totally confined to those morbid affections in which its use is altogether inadmissible. But under this term are to be comprehended, all those morbid affections which the class, from its nature, has a tendency to augment.

From what has been said, it appears that the morbid affections in which the use of a class of medicines is admissible from particular circumstances only, may be divided into two kinds. From the definitions given, the distinction between those morbid affections during which the use of a class may be esteemed indifferent, and those by which it may properly be said to be contra-indicated, will be manifest. Cases may indeed occur where the use of a

class will, from circumstances, be proper in either of them. But, where these do not take place, an attentive practitioner will esteem it equally necessary to avoid its use in both. The danger, however, to be apprehended from its employment in the one, is much greater than in the other. Hence, advantage may be derived from separating those which fall under each. But, the one set being pointed out, the other will of course be known. And, as the greatest delicacy is necessary in the employment of a class in morbid affections where it has a pernicious tendency, it will be sufficient to enumerate these. In treating, then, of the different subjects comprehended under the general title of the use of a class of medicines, after the consideration of the subdivisions already pointed out, the last subject of investigation to be

proposed, is an enquiry into the morbid conditions contra-indicating its use.

After what has been already said with regard to the method of conducting an inquiry concerning indications, it will be necessary to add but little concerning contra-indications. The latter, as well as the former, are to be deduced from the nature of the class. They must not be founded upon single or inconsiderable changes which it may be capable of producing, but upon its leading and united effects. After any morbid condition is from thence pointed out, as contra-indicating the use of a class, it will next be requisite to explain the principles upon which it is pernicious in such a state. Lastly, with a view to confirm or correct theoretical reasoning, it will be necessary

in this case also to have recourse to practical facts and observations. With this head of enquiry, conducted in the manner proposed, the investigation of the use of each class may be concluded.

CHAP. VI.

*Concerning the Investigation of the History
of particular Articles of the METHODUS
MEDENDI.*

FROM a proper execution of the plan which has been proposed, it might be imagined, that a full view of the general doctrines of cure could be obtained. But, for this purpose, it is requisite that all the articles referred to the Methodus Medendi should be distributed into a determined number of associations; and, where any considerable diversity of effects occurs among the individuals belonging to a class, that it should be subdivided into natural orders. Could this be done, a proper

consideration of the nature and use of each class would supersede the necessity of descending, in any instance, to the history of individuals. By prosecuting the enquiries pointed out under these general heads, the manner in which every particular article of the *Methodus Medendi* acts in the cure of diseases, and the purposes to which it can be applied, would be clearly understood. But, if a distribution of the different articles cannot be obtained with the conditions here proposed, a defect must necessarily arise.

When, in place of artificial associations, natural ones are aimed at, it is scarce to be imagined that there will not occur articles of the *Methodus Medendi*, which, from the peculiarity of their operation, must stand single. But, if this be the case, even in

any one instance, the account of general associations only, must at least be in some degree defective, when used for the explanation of the particular articles employed in the cure of diseases.

Articles, on the other hand, will often, with propriety, be referred to a particular class, from their possessing all its characterizing properties, and from being in their nature such, that they can be employed to answer the general purposes for which it is indicated. But, while this is the case, they may, at the same time, possess properties not to be found in any other individual referred to the class. Hence, the account to be given of their nature and use, as far as it can with propriety fall under the investigation of the class in general, would be both lame and imperfect. In

this respect, therefore, these articles are in some degree in the same situation as if they had fallen under no association.

Besides these, there is another imperfection under which this method of considering the subject will sometimes labour. A proper illustration of the doctrines applicable to classes of medicines, will often be a sufficiently full and complete account of all that is necessary to be known with regard to the different individuals comprehended under them. But, even while this is the case, it will sometimes happen that the application of these general doctrines to particular articles, is neither obvious nor free from doubt.

From what has been said then, it appears, that many inquiries which are inse-

parably connected with Therapeutics, can only be prosecuted from introducing the history of individuals. By this means an opportunity will be afforded for treating of individuals comprehended under no proper association. By this means, many particulars concerning some individuals, which could not be mentioned when treating of the general classes to which they belong, may with propriety be enumerated and explained. Lastly, by this means, general principles will be illustrated from being exemplified in particular cases. Hence, to the two general heads already mentioned, it will be necessary to subjoin, as a third, the consideration of individuals.

It must indeed be allowed, that the in-

roduction of the history of particular articles into a system of Therapeutics, is not unexceptionable. The consideration of individuals belongs entirely to the *Materia Medica*. A distinction was formerly pointed out between that branch of medicine and Therapeutics. It was alledged that, altho' the two be much connected, yet, in reality there is an obvious foundation for a division. Many advantages will undoubtedly arise from considering every branch of medicine as a distinct subject of enquiry. Hence a separate consideration is to be aimed at in this case, as well as in others.

It will, however, be allowed, that in every case, a full consideration of the subject of enquiry is to be esteemed the first and grand object. However desirable, there-

fore, a separate consideration of every branch of medicine may be, it is still to be viewed as a secondary object only. Hence, altho' the inconvenience which must arise from blending together subjects which are separate and distinct, is as much as possible to be avoided; yet, where this intermixture is necessary for the attainment of a full investigation, it must be submitted to as one of those inconveniencies to which, from the strict connection and mutual dependence of different branches of science, we are inevitably subjected. To answer the objection before stated, it is then only necessary to observe, that, without introducing the history of particular articles, Therapeutics cannot be completely considered.

After what has already been said, it would be superfluous to mention, that, in order

to obtain a complete account of the Methodus Medendi, the history of every particular article is by no means necessary. In the view which is here proposed to be taken of Therapeutics, the consideration of individuals is only to be introduced where their history is particularly requisite for one or other of the purposes already mentioned. After these observations on the circumstances in which the history of any particular article is to be introduced, it next becomes necessary to point out the plan on which this history may be conducted with the greatest advantage.

The observations to be offered concerning any particular substance employed for the purposes of medicine, may be divided into two heads, the first treating of its na-

tural, the second of its medical history. Could our knowledge of the natural history of substances be rightly applied to the discovery of medical properties, it would in all probability be of the highest utility. It is, however, to be lamented, that, in the present state of that subject, the conclusions which can be deduced from it are by no means so certain, that any reliance can be put upon them. A minute enquiry into this subject then, as being tedious and not immediately applicable to use, would be both unnecessary and improper.

But, although a minute enquiry into the natural history of any particular substance be not necessary for the investigation of its medical properties, yet this subject is by no means to be entirely overlook'd. From

theoretical conclusions, the properties which a medicine possesses may almost, in every case, be in some degree determined. But the data from whence these conclusions can be drawn fall under the natural history of the substance. This subject, then, deserves to be prosecuted, at least, in as far as it is subservient to the end now mentioned. With this view, under the title of the natural history of any substance, it will be necessary to inquire into its sensible qualities, its chemical analysis, and, where it can be discovered, the natural order to which it belongs; these being the chief, if not the only particulars from which useful theoretical conclusions, with regard to medical properties, can be deduced.

The second general head proposed to be considered, in treating of any substance,

was, its medical history. This is a subject both more material and more extensive than the enquiry last mentioned. It is not, therefore, to be passed over in the same short and superficial manner.

In treating of the medical history of every substance, the first thing naturally claiming attention is, an enquiry concerning the various purposes to which it has been applied from its first introduction into medicine. By this means, the most complete view will be obtained of all the properties which it can be supposed to possess. The first step then to be prosecuted in the medical history of any substance is, what may be termed an account of its former use in medicine.

There are, however, few substances

which, after being long employed in medicine, have not undergone very considerable changes in point of reputation. It is at least to be imagined, that time and experience will have had some influence, both in detecting former errors, and in confirming and investigating real properties. To the account, therefore, of the former use of any substance, it will be necessary to subjoin, as a second head, its present, and, as far as it can be detected, its real character, in the most simple state in which it is exhibited.

It is well known, that the properties of substances are greatly altered from preparation ; but the history of any individual cannot be complete till these varieties have been determined. In treating of any article then it will be necessary to subjoin a

third head to the two already mentioned, containing an account of the different modes in which it may be exhibited, and of the changes arising from thence. Under this head will fall to be considered, the different forms in which a medicine may be employed, the doses in which it may be given, and the treatment best fitted to favour its operation. Under these three heads, every thing necessary to be known with regard to the medical history of any article may be distinctly delivered.

When it becomes necessary to introduce the history of any particular article, from treating it in the manner which has here been proposed, the deficiencies which would arise from limiting enquiries to the nature and use of classes only, may, in a great

measure, be supplied. By this means, the study of a branch of medicine, of great importance in the practice of the art, may be conducted with advantage, and the general doctrines of cure fully investigated.

C H A P. VII.

Concerning the Pharmaceutical Treatment of Medicines.

FROM the enquiries already proposed, the purposes to which different medicines can be applied in the cure of diseases may readily be investigated. By this means, we may become acquainted with the necessary data for the employment of simple medicines, when they can be used in the state in which they are naturally found,

The use of simple medicines, which may reasonably be supposed to have constituted the most ancient practice, is perhaps not

the least efficacious. But from the records of medicine it appears, that, from this practice, Physicians, by degrees, deviated very widely. Of late, indeed, they have made considerable returns to that simplicity from whence they set out. There is no question that, in the deviations from simple practice, the mark was greatly overshoot; yet there is as little reason to doubt, that the intentions from which these deviations proceeded were both rational and proper.

Many of those materials which are employed for the cure of diseases are, in their natural state, in a rude condition, and by no means readily applicable for the purposes of medicine. Some of them, from their sensible qualities, are so nauseous as to be highly disgusting to the palate. In

others the active principles are so much diffused in different matters, that the good effects which they are capable of producing cannot be obtained, without the employment of very large quantities. Besides, it often happens, that useful medicines possess, in their natural state, qualities which are deleterious to the human frame, and which must be corrected before they can with safety be employed: By the application of art, then, it is intended that medicines should be rendered more agreeable, more convenient, more safe, and more efficacious than they are in their natural state. To obtain these ends is the intention of pharmacy.

By Pharmacy is to be understood that branch of the medical art which treats of the preparation and composition of medi-

cines. It is then perfectly distinct from Therapeutics. To enter into any full detail even of the general heads of enquiry on this subject, would here be improper. But, at the same time, it is well known that the virtues of medicines are greatly affected by preparation. Hence, the general rules respecting the pharmaceutical treatment of substances employed for the purposes of medicine must be intimately connected with the general doctrines of cure. This subject, then, becomes a necessary supplement to the *Methodus Medendi*, as well as the last which was mentioned. A view, therefore, of the general heads of enquiry may likewise be expected.

From the definition which was formerly given of pharmacy, it is evident that this subject may properly be divided into two dis-

tinct parts. The first of these will treat of the preparation of medicines. Under this will fall to be mentioned all those rules, by the proper observance of which medicines may be exhibited in the most commodious and efficacious form of which their nature will admit. The second will treat of the composition of medicines. Under this must be comprehended the directions necessary to be observed, when different articles are to be combined together with a view of acquiring properties which they did not possess when taken singly. Preparation and composition then must necessarily be marked out as the most general heads of enquiry.

Many substances employed in medicine can be collected only at particular seasons. Some of these, if left in the state in which

they are found, would in a short time either change their nature, or be entirely destroyed. Others are not only in this situation, but must be brought from distant countries, and undergo various changes of temperature. By this means, they are still farther exposed, either to have their qualities altered, or to be totally destroyed. Hence, an essential part of preparation consists in the means of preservation.

With a view to determine the means by which the preservation of substances may be effected, it is first necessary to investigate the causes which induce either destruction or a change of qualities. The alterations produced in substances which we would wish to prevent most frequently depend upon the nature and proportion of some of their component parts. Thus, for

example, nothing is more common than to observe an intestine motion landing in putrefaction induced by a large proportion of aqueous particles entering the composition of any substance. One means, therefore, by which substances may be preserved is, by diminishing the quantity of these parts when in a high proportion.

This, indeed, cannot in every case be effected, without in some degree impairing the virtues of the substance. But, on the other hand, it will often be the most effectual means of heightening and concentrating virtues. Hence, in considering the means of preserving substances, the first subject of enquiry will naturally be concerning the methods of removing those parts which have a tendency to produce a change in their nature.

Fermentation and putrefaction, inducing an alteration or destruction of the qualities of medicines, are often occasioned by the action of external bodies. Water, externally applied, will frequently insinuate itself into substances employed as medicines, and produce the same effects as their native juices. The access of air is well known to be a circumstance, in a great measure, essentially necessary, before putrefaction can take place. Heat, if not altogether requisite to putrefaction, has, at least, a remarkable tendency to promote it. Cold, altho' in its own nature a strong antiseptic, yet, when applied in an intense degree to many substances, destroys their texture, and entirely deprives them of their former qualities. Insects of different kinds, by preying upon substances, frequently produce changes of a similar nature. From all this

it appears, that the action of a variety of external matters is highly adverse to preservation.

All these, however, cannot in every case be totally excluded. In many, their total exclusion would be improper. It becomes then necessary to consider how far, and by what means their action may be most advantageously restrained. Under the head of preservation, therefore, a second subject of enquiry will be, concerning the means of preventing the influence of external accidents.

In some cases, the means of preservation, which fall under the two heads of enquiry already suggested, cannot be employed. In others, all the effects which they are capable of producing will be insufficient for

obtaining the end proposed. Hence, it becomes necessary to have recourse to means of preservation of a different nature.

While some substances are naturally prone to putrefaction, others are known to possess remarkable powers in resisting it. In consequence of this, they are employed for preserving substances, as well for the purposes of medicine as of diet. With this intention, salts, sugar, spirits, vinegar, and many other antiseptics are in daily use. From a variety of circumstances, the propriety of employing any one of these, the proper choice of the individual to be employed, and the method of employing it, must be determined. Hence, to the two subjects of investigation which have already been pointed out under the general title of Preservation, an enquiry con-

cerning the addition of antiseptics may be added as a third. Under these three heads the general rules respecting preservation, and the means by which it can best be obtained, may be fully investigated.

Some substances can be employed for the purposes of medicine in the state in which they are presented to us by nature. But, considering the great number of medicines which are in use, this may be said to be the case with a few only. By much the greatest part of them must undergo some preparation at least, before they can be conveniently exhibited in the cure of diseases. Hence, under the general head of preparation, a second subject of investigation naturally suggested, is an enquiry with regard to the different forms in which medi-

cines may be most advantageously employed.

The different forms in which medicines are exhibited are very numerous. This, therefore, must of course be a most extensive subject of enquiry: Hence proper subdivisions are here particularly necessary, abridging an investigation which would otherwise be very tedious. With this view, the different forms of medicines, according as they are intended for internal or for external use, will afford a foundation for separate subjects of enquiry.

Many of the forms of medicines which are taken internally are introduced into the stomach in a solid state. Of the various preparations which may be referred to this division, the forms of powders and

pills may be esteemed the two extremes. The former is the loofest texture in which any substance is taken into the stomach, and the latter the most firm. For the proper preparation of powders, the principal requisite seems to be a minute division of parts. For that of pills, such a consistence as, while it gives a proper cohesion, is not incapable of solution in the alimentary canal. But many particulars, which are necessary to be attended to in preparation, are in common to both these forms. Besides this, from the rules and directions applicable to the extremes, many of those circumstances which deserve attention in the employment of forms of an intermediate texture, may be readily understood. Hence, a proper knowledge of the rules which are applicable to those solid forms in general, which are used internally, will super-

feels the necessity of many repetitions under particular forms. An enquiry, therefore, concerning the forms of medicines which are taken internally in a solid state, may be marked out as one subject of investigation.

From the subject of enquiry which has now been pointed out, another is naturally suggested. After considering the general directions respecting the forms of medicines which are to be employed internally in a solid state, it next follows that those should be treated of which respect the forms used in a fluid state.

The different modes of preparation which will fall under this head, are even more numerous than those which can be referred to the last. They may be divided into

two kinds ; either they are naturally fluid, or they acquire their fluidity by the application of art. Those medicines which are naturally fluid, when they are to be exhibited in the same form, in general require no preparation at all. When they do require it, they stand in need of nothing farther than being freed from extraneous matters. This must be effected on different principles, according to the nature of the substances which it is necessary to separate. Hence, although this be not a field for extensive enquiry, yet it will at least merit some attention.

Where fluidity is to be artificially acquired, it is chiefly, if not always, obtained in one of two ways ; either by expression, or by the addition of fluid matters. These,

therefore, naturally suggest themselves as separate heads of enquiry.

That any medicine may be a fit subject for expression, several circumstances are requisite. It is not only necessary that it contain a considerable proportion of fluid, but that this fluid be in such a state as to be capable of being detached from it without great difficulty. Besides, that in this way an efficacious remedy may be obtained, it is necessary that the active powers of the medicine should reside in its fluid parts. These conditions, however, are rarely united. Hence, this is a method of preparation applicable to few substances only. Where it can be applied, the chief thing requisite is to prevent the admixture of foreign matters. The rules and observations, therefore, which are ne-

cessary with regard to it, need not to be numerous.

The variety of preparations which may be formed by the addition of fluid matters is very great. In different medicines there are many active matters capable of being dissolved. Each of these active matters may be dissolved by different menstrua. Besides this, the medicines formed by any menstruum will be much diversified by the method in which it has been applied. The active parts of medicines which are principally capable of being dissolved are, saline, mucilaginous, oily, balsamic, and resinous matters. The menstrua which are chiefly employed are, water, spirit, wine, and vinegar. From these, by different methods of application, are formed infusions, decoctions, tinctures, and many other forms of medicines. The

number of preparations, then, is a sufficient ground for concluding that the directions falling under this head must be numerous.

The efficacy of all medicines obtained by the application of fluid matters, will greatly depend upon the menstrua being properly adapted to the ingredients from which active powers are to be extracted. Thus, water is best fitted for dissolving saline and mucilaginous matters. Spirit, on the other hand, is the proper menstruum for oily, balsamic, and resinous substances. Wine and vinegar in some degree combine the solvent powers of the two other menstrua. They are often preferable to water, as covering taste, heightening colour, and giving a stronger impregnation; and to spirit, as not being so highly stimulant. Hence, directions will likewise be ne-

cessary for determining the choice of the menstruum, by means of which any of these fluid preparations are to be formed.

From what has been said then, it appears, that, under the head now mentioned, many particulars must be comprehended. Hence, in treating of preparation, it must be looked upon as an essential subject of enquiry. With this head, the observations to be offered on the different forms of medicines which are intended for being used internally, may be concluded.

Having pointed out the enquiries necessary to be prosecuted in considering the different forms of medicines which are used internally, the only remaining branch of this subject respects the consideration of those intended for external use. The dif-

ferent forms of medicines which can be used in this way are indeed less numerous than those which can be referred to the preceding head. They must, however, be considered as admitting of considerable variety; and the rules applicable to the different forms intended for internal use will not apply to them. The footing, therefore, on which they require a separate consideration from the former head, is manifest. It must, however, be allowed, that many observations made with regard to the one will likewise hold good concerning the other. Hence, from a full investigation of the former head, the enquiries on this subject will be much abridged.

To the head of preparations intended for external use, are to be referred fomentations, ointments, washes, plasters, and ma-

ny others. It is evident, therefore, that the division formerly pointed out is likewise naturally suggested on this subject. Hence, in treating of the medicines used externally, the forms in a solid or in a fluid state will afford a foundation for separate enquiries.

The preparation of medicines being thus considered, the only subject of enquiry now remaining respects their composition. This was formerly pointed out as one grand branch of the art of pharmacy. The advantages which are aimed at in composition are no less obvious than those which may be derived from preparation. Medicines, by being united, often entirely change their nature, and acquire active powers which none of them before possessed. Many active substances, which are of such a

nature that they could not, without imminent danger, be exhibited by themselves, will, from a very slight addition, become safe and efficacious medicines. Where substances employed as medicines possess a very high degree of activity, they must often be used in doses so very small, that, if they were to be taken entirely by themselves, they could neither be conveniently exhibited, nor accurately divided. But, from a variety of additions which will have no tendency, either to alter or impair their virtues, these inconveniences may with the greatest facility be obviated. It is then sufficiently evident, that, from combining together substances employed for medical purposes, advantages may both be expected and obtained.

But it is by no means to be imagined,

that composition will in every case be attended with good consequences. From the same principles on which it is sometimes of service, it will in other cases have a manifestly bad effect. That good effects may be obtained from medicines, it is on some occasions necessary that they should be employed in a very concentrated state. In such a situation, every addition will have a manifest tendency to weaken their power. Besides this, even the most active medicines will often, by a very slight and trifling addition, be rendered totally inert. And farther, it is by no means uncommon to find two medicines which will readily unite together, and, when united, will form a very useful composition ; but, upon the addition of a third, which would even have readily joined with either taken separately, the former

union will not only be destroyed, but the purposes of composition entirely frustrated. It is not therefore to be imagined, that, in order to obtain a safe and efficacious medicine, nothing farther is requisite than to jumble together a number of active ingredients. In order to obtain the advantages which may be derived from composition, without being exposed to the inconveniences which it may occasion, many circumstances must be attended to. An investigation of these, therefore, will readily be esteemed a subject of great importance.

The opinions which mankind, at different times, and in different countries, have entertained with regard to composition, seem to have been very opposite. This will readily appear from consulting either practical writers, or dispensatories publish-

ed by authority. From an acquaintance then with the rules of composition, we will be enabled to judge of the propriety of the various compositions adopted by different writers. But, besides this, it is not to be doubted that many compositions hitherto unemployed may be introduced into practice with advantage. Hence a knowledge of this subject becomes farther necessary, that these may be judiciously and elegantly contrived. The rules to be observed in composition will entirely respect two particulars, the possibility of combination, and the advantages to be derived from it. Combination may often appear proper when, from the chemical qualities of the substances, it cannot be effected. It may often, on the other hand, be effected with the utmost facility, when it would be entirely useless. Hence, either in examining or

contriving any composition, both particulars claim attention.

The first of these is an enquiry entirely chemical. The possibility of combination, and the effects of mixture can be determined only from an acquaintance with the properties and affinities of bodies. By means of mechanical assistances, a momentary union may perhaps, in every case, be effected. But, in many cases, particularly if the bodies thus united be in a fluid state, it will be momentary only. The advantages of composition, however, cannot be expected without a union in some degree permanent. This is only to be obtained when the matters which are mixed together are capable of being united in a state of proper solution. Hence the principles of chemistry are the sources from whence

the rules of composition, in this particular, are to be entirely derived.

Being satisfied that substances are capable of union, it next becomes necessary to enquire what advantages are to be expected from it. The opinion which authors have entertained of this subject may readily be discovered from considering the different parts of which they have supposed every formula to consist. Five different parts have in general been enumerated. These have been termed, *basis*, *adjuvans*, *corrigens*, *dirigens*, and *excipiens*. By the *basis* of a composition is meant, that part by means of which the intention proposed from the prescription is principally to be answered. By the *adjuvans*, something added to the basis from which its operation may be rendered more strong than would

otherwise be the case. By the *corrigen*s, something added with a view either to cover disagreeable sensible qualities, or to correct noxious powers. By the *dirigen*s, something determining the operation of the other articles in a particular way. And, by the *excipien*s, something intended to receive all the others, and to promote a proper union.

If these are to be considered as the proper constituent parts of a composition, the heads of enquiry on this subject are evident. But this matter may be viewed more simply. All composition seems to be intended with one of three views, either to co-operate, to correct, or to give a proper form. By considering, therefore, how far any addition will serve one or other of these purposes, the advantages to be derived

from combination may be determined, Upon the whole, by prosecuting in a proper manner the different enquiries which have been pointed out, we can alone expect to attain to that elegance in prescription which will unite agreeable simplicity, with safety, convenience, and efficacy.

An ABSTRACT of the PLAN
proposed to be followed in treating of
the METHODUS MEDENDI.

That the plan which has now been delivered for considering the general doctrines of cure may be more distinctly understood, it will not be improper to review the various subjects of inquiry which have been proposed. The particular heads will be still more manifest, when they are seen detached from any reasons intended to point out their necessity, or evince their propriety. For this purpose, after the account which has already been given, it will be sufficient to subjoin an abstract of the plan, without enlarging upon particulars.

I. CONCERNING THE NATURE OF THE CLASS.

1. *A Definition of the Class.*

- a. The general and obvious properties possessed by all the individuals referred to the class.
- b. Negative marks for the exclusion of substances possessing the leading properties of the class.

2. *The direct Effects of the Class.*

- a. A proof of the reality of these effects.
- b. An investigation of their causes.
- c. An attempt to ascertain the degree in which they take place.

3. *The Changes induced in the System by the direct Effects of the Class.*

a. b. c. The same subdivisions as under the preceding head.

4. *The different Orders into which the Class may be divided.*

a. The distinguishing properties of each order.

b. Examples of particular articles which may be referred to it.

II. CONCERNING THE USE OF THE CLASS.

1. *The Effects of the Class in the Cure of Diseases.*

a. The indications deducible from its nature.

a. An illustration of the morbid state on which each indication is founded.

b. The manner in which the class operates in fulfilling the indication.

c. Examples of diseases in which it may be used with a view of fulfilling it.

b. Practical remarks on the use of the class in particular diseases.

2. *Circumstances respecting the Choice of Orders.*

a. Circumstances respecting the nature of the change which is required in the system.

b. Circumstances respecting the degree of change which is necessary,

c. Circumstances respecting the condition of the patient with whom the remedy is to be employed.

3. *Cautions to be observed in the Use of the Clafs.*

- a. Cautions deduced from the nature of the clafs itself.
- b. Cautions deduced from the condition of the patient.
- c. Cautions deduced from the regimen best adapted to the operation of the medicine.

4. *Morbid States contra-indicating the Employment of the Clafs.*

- a. An illustration of the foundation of these morbid states.
- b. Practical obfervations for confirming the reality of the contra-indications.

III. CONCERNING THE HISTORY OF PARTICULAR ARTICLES OF THE METHODUS MEDENDI.

1. *The Natural History of an Individual.*

- a. Its sensible qualities.
- b. Its chemical analysis.
- c. The natural order to which it belongs.

2. *The Medical History of an Individual.*

- a. An account of its former use in practice.
- b. An account of the purposes for which it is at present employed.
- c. An account of the different modes in which it may be exhibited.
 - a. Varieties with regard to the form in which it may be used.

b. Varieties with regard to the quantity which may be given.

c. Varieties with regard to regimen.

IV. CONCERNING THE PHARMACEUTICAL TREATMENT OF MEDICINES.

1. *The Preparation of Medicines.*

A. For preservation.

a. The means of removing component parts apt to change their nature.

b. The means of preventing the access of external causes inducing a change of qualities.

c. The addition of antiseptics.

B. For a convenient form.

A. *Preparations intended for internal use.*

a. In a solid state.

b. In a fluid state.

a. Matters naturally fluid.

b. Fluidity obtained by expression.

c. Fluidity obtained by the addition of Menstrua.

B. For external use.

a. } The same division as under
b. } the preceding head.

2. *The Composition of Medicines.*

A. The possibility of combination.

a. The means of obtaining a temporary union.

b. The means of obtaining a permanent union.

B. The advantages of combination.

- a. For augmenting virtues.
- b. For correcting active powers.
- c. For giving a commodious form.

———If vain our toil,
We ought to blame the culture, not the soil.

POPE.